Curriculum in the Schools of British Columbia

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PREFACE

The people primarily responsible for preparing this report met for the first time as a research group in May 1987, about a year ago. None of us had ever worked on a Royal Commission before; in fact, we had never worked as a group before. Several of us met for the first time on this project.

It has been an exciting, exhilarating, thought-provoking, stimulating, arduous, and exhausting year. We have read, talked, discussed, listened, argued, written, and re-written. The topics we dealt with covered the entire range of things having to do with schooling. Most were related in some way to curriculum; others, were not. It was an educator's dream assignment: an opportunity to look at the entire educational forest rather than occasional trees, and to make recommendations which could affect the quality of the education offered to the next generation of students in British Columbia.

We have benefited from the advice and experience of a great number of people; so many, that we cannot acknowledge them all individually. Some of the advice came in the form of formal presentations, either oral or written, but a lot came in casual conversation which is highly elusive and we may have lost track of some of those sources. We owe a debt of gratitude to all of these people, but particularly to the personnel from the Ministry of Education and a number of school districts with whom we had frank and very helpful discussions.

One first major activity was a seminar held at the University of British Columbia in July 1987. We heard presentations from Bernard Shapiro, Dan Birch, Jerrold Coombs, Verna Kirkness, and Walt Werner. That day provided some of the fundamental ideas on which our report and our recommendations are based. We are grateful to everyone who participated in that seminar, and wish to note the special contribution made by four graduate students who prepared summaries of the day's proceedings: Patricia Marin, Alan MacKinnon, Deborah Court, and Michael Grant.

Jerrold Coombs has had a substantial influence on our thinking, and we are grateful to him. We are particularly appreciative of his work in assembling a set of papers on our five criteria of quality of the curriculum. Those papers — by Jerrold Coombs, LeRoi Daniels, Michael Grant, Murray Ross, and Mark Selman — were most helpful. So too were the papers written for us by Linda Eyre, Carol LaBar, Stan Shapson, and Ian Wright. Laura Atkins provided valuable research assistance and, along with Roland Case, summarized material from the briefs. To all of these people we extend our thanks.

We also wish to thank Bonnie Isles, Saroj Chand, and Lori Teichman for their assistance in helping us put this manuscript together.

Finally, we thank Commissioner Barry Sullivan, his assistant Arthur Kratzmann, and all the members of their staff for their unstinting support and encouragement during the entire project. We are truly appreciative.

Many people contributed ideas and suggestions for this report, but in the end it is ours. This report is a statement of our ideas about what the curriculum in the schools of British Columbia should be like. We hope the ideas meet with acceptance and find fertile ground in which to grow.

David Robitaille

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1. Introduction

The curriculum is the concrete representation of the goals a society holds for its schools. The quality of the programmes and instruction planned for students, of the textbooks and other materials approved for use in the schools, and of the facilities established for educational activities provide tangible evidence of society's hopes and expectations for coming generations. If the schools are to provide *A Legacy for Learners*, it is through the curriculum that those goals will be realized.

1.A The Pressure for Change

The curriculum, together with teachers, administrators, resources, and facilities, constitute the educational system as it is encountered by students. That system frequently seems monolithic and slow to change. In many ways, it appears to be not very different from that encountered by students a generation ago[1]; or as the writer of one brief put it, "Many of the school subjects have not changed since I went to school 20 years ago." At the same time, from the perspective of those who are part of the system, the rate of introduction of new programmes and new initiatives seems too rapid. In just the past few years, changes that have been initiated from within the educational system, and which teachers and students have had to accommodate, include a new elementary fine arts programme, a new science curriculum for junior high schools, a new elementary mathematics programme, a new social studies curriculum, revised graduation requirements, and the re-introduction of Grade 12 examinations.

There is also pressure from sources outside the school system to modify or restructure the curriculum in order to make room for new courses or topics which are seen, at least by their proponents, to be sufficiently important and timely to warrant their inclusion in the curriculum. Sometimes this pressure comes from the government of the day, from educational groups or institutions, or from lay or professional groups in the community. Several examples of this kind of pressure are found in the briefs. The brief submitted to this Commission by the Architectural Institute of British Columbia recommended the inclusion of a course in architecture in the curriculum, and the Canadian Association of Geographers called for the introduction of a compulsory course in geography. Other special interest groups made similar proposals in support of their point of view.

In the past several years, the school system has introduced a compulsory course in consumer education at the secondary level, initiated a science and technology course at the Grade 11 level, responded to increasing demands for the availability of French immersion programmes, and moved to include programmes on family life education, AIDS, and the prevention of child sexual abuse as part of the curriculum. Similar kinds of activities occur at the school and school district levels to meet demands for locally-developed courses which reflect local needs and priorities.

Coping with all of these demands can be difficult, especially when changes appear to be introduced without adequate consideration of their possible impact on the system as a whole and the constraints within which that system must operate. New courses are appended to the programme of studies without displacing any part of the old curriculum. The result is what some of the briefs describe as a smorgasbord curriculum which lacks coherence and structure. There is great reluctance to delete any topic or course, and we end up suffering what some have termed "curriculum overload."

In their brief, the North Vancouver Principals and Vice-Principals Association described the situation as follows:

> *Throughout this brief, Mr. Commissioner, our major theme has been the concern about an apparent (sic) uncoordinated, add-on approach by the Ministry to curriculum development and support. This approach has often meant confusion and disorganization, a multitude of clerical tasks and responsibilities, and a serious loss in our flexibility to provide a quality education for the secondary students in North Vancouver. No doubt, administrators in other school districts are experiencing this problem.*

Another submission contained the following recommendation: "Curriculum should not be introduced on an ad hoc or 'fast-track' basis."

1.B The Mandate of the Schools

There is a great deal of talk and opinion about how good or how bad our schools really are. A fundamental obstacle which stands in the way of providing an adequate answer to the question of whether or not the educational system is functioning as we want it to function is that we have no clear indication of what is expected. There is no explicit mandate and no comprehensive statement of goals for the educational system.

It appears that the mandate of the schools is taken as a given, as something which requires no explication or precision. This is a perverse view, and one we can ill afford. The system needs an explicit, specific mandate that is widely agreed upon, and it needs it soon. This opinion was expressed in a number of briefs. Over and over again, in briefs submitted by individuals and by groups, by educators and by non-educators alike, we find a plea to have a clear mandate established for the schools.

There may have been a time when the school could limit its sphere of activity strictly to the intellectual development of students, but that time is clearly in the past. Nowadays, beyond their concern for the curriculum and intellectual development, teachers and others involved in the educational process must be sensitive to the physical, social, and emotional needs of their students. Children who are hungry, neglected, tired, emotionally disturbed, or victims of physical abuse will not benefit from their time in school as they otherwise might. Schools and teachers are being called upon with ever-increasing frequency to deal with these types of problems even though they have traditionally been considered to lie outside the mandate of the schools. This demand persists in spite of the fact that, as was noted in several briefs, most teachers have not been prepared to deal with such problems in their professional preparation programmes. Moreover, the additional resources required to deal with these kinds of problems on a day-to-day basis have not been provided to schools at the provincial level.

1.C Scope of the Study

Our investigation of the curriculum in British Columbia schools was conducted in the context of all these changes and pressures on the system. In order to ascertain the current status of curriculum, to make recommendations about what it should be, and to propose ways and means of implementing those changes, we read widely and listened to as many people as possible. We reviewed the documents which set out the official curriculum. We visited schools, observed classes, interviewed teachers, administrators, parents, students, and school-district personnel to obtain information about their perceptions of the official curriculum. We attended public hearings of the Commission, met with a number of special-interest groups, and read all of the more than 2000 briefs submitted to the Commissioner as well as written summaries of oral presentations made at the hearings. We spoke to personnel from the Ministry of Education in British Columbia and from other jurisdictions, to curriculum theorists, and to practitioners. We read reports from previous Royal Commissions on Education conducted in this province, as well as the report from the *Let's Talk About Schools* study. We also did an extensive review of the popular and the academic literature in the field of education, and we commissioned papers to be written on a number of specific issues.

The scope of curricular considerations is immense, and includes virtually all of the current issues in education. Of necessity, our treatment of some of these issues is more extensive than others. For example, we have not made specific recommendations about every course or subject in the curriculum. However, we have attempted to provide a set of principles which apply to the selection, organization, teaching, and assessment of curricula. We have included discussion of issues such as special education for the gifted and for the disadvantaged, pre-school experience, lifelong learning, multiculturalism, the impact of technology, French immersion, second-language learning, and heritage languages. We have made a number of suggestions ranging from highly specific to fairly general.

In our discussions with educators, students, and parents in the province, and in our visits to schools, we heard about and saw many examples of high quality education. Stimulating learning environments, eager students, enthusiastic teachers, and innovative programmes abound, and we have tried to describe a number of these in the text to bring it to life and to make the spirit of our suggestions clear. We also became aware of a number of problems and deficiencies, places where the system could and should improve. These too we have tried to deal with, and a number of our suggestions address specific areas where improvements are needed.

1.0 Structure of the Report

Our report is divided into six sections. After this introduction, we discuss the conceptual framework and introduce the three-dimensional model which we developed for this study. In the next section we present an analysis of the current status of the school curriculum in British Columbia, and that is followed by a discussion of our recommended re-structuring of that curriculum. In Section 5 we discuss some of the major issues which the educational system is currently facing and make a number of suggestions for change. Finally, in Section 6, we indicate how the suggestions we have made might be phased in over a period of time.

Reference

1 Francis Bula, "No More Pencils, No More Books: Back to the Future," *The Vancouver Sun*, Tuesday, 3 May, 1988.

2. Framework for the Report

It is important to be clear about what we mean by curriculum. Definitions provided in the educational literature range from "a programme of studies taken by an individual," to "a plan for the education of learners." The same sort of range in the use of the term is evident in briefs submitted to the Royal Commission. Some writers speak of the curriculum as a set of "school subjects" and propose changes in terms such as, "More science should be taught in elementary school," "Physical education should be taught every day," and "Emphasis should be placed on reading and mathematics." Others speak in terms of processes or skills they think should be part of the curriculum, so that comments such as, "Critical thinking skills[1] should be taught," "Communications should be a major part of the curriculum," and "Emphasis should be on learning to learn" are found frequently. Still others use the term in describing the kind of future the curriculum and the educational system should be preparing students to face. They make recommendations for courses in areas such as career preparation, family life education, and general life skills.

2.A A Conception of Curriculum

Certain aspects of all three of these points of view about the curriculum coincide with ours. Students certainly need to acquire up-to-date, relevant knowledge. School subjects are therefore crucial to the curriculum, and we need to monitor the content of each subject and the emphasis accorded it in the programme on a regular basis. Critical thinking and learning to learn are abilities we wish all children to develop, and this should be done using the subject-matter disciplines as vehicles. Students also need an introduction to the world in which they will be living, they need information about matters of health, career choice, social justice, and the mores of our society. One father expressed his views on these matters in the following way:

> *I suppose that most important to me is that my children have attained a reasonable level of skill in reading, writing, and mathematics...Secondly, I expect my children to have been taught to reason in a logical and disciplined manner...Thirdly, I would expect my children to have memorized a large volume of facts: facts about history, facts about the scientific world, facts about the political world including its various laws and philosophies.*

Our view may be summarized in the following way. We see the curriculum consisting of a number of subjects, each directed toward the two-fold goal of acquisition of knowledge and development of abilities and attitudes. The subjects we see as being partitioned into three areas: Humanities and Fine Arts, Sciences, and Practical Arts. The first two categories are familiar and require no further explanation here. The third, the Practical Arts, includes areas such as physical education, home economics, industrial education[2], health and guidance, and various aspects of what might be termed lifestyle education. All three areas overlap and share the common goals of assisting students to develop the abilities to think critically, a disposition toward learning for its own sake and as a life-long enterprise, and feelings of self-worth.

Society demands that all students attend schools; and, as Jerrold Coombs[3] told a seminar we organized in July 1987 to discuss the nature and role of curriculum in our schools, a free society must have a very strong case to justify exercising this degree of coercion over its citizens. That case rests on what Professor Coombs described as the four roles for which we want all of the students in our schools to be prepared. We want our students to be prepared to function as:

- responsible participants in our democratic processes and institutions,
- responsible participants in our social morality,
- economically productive members of society,
- caring and nurturing family members and parents.

These four statements of the fundamental roles of all citizens also describe the context in which education must take place, no matter what the subject matter or topic. Whether it is a question of teaching children in the primary grades how to read, discussing the causes of wars in a social studies class at the junior secondary level, or learning about the conic sections in an algebra course, the underlying purpose is to help students prepare for their roles in society.

The briefs refer to the importance of this broader conception of curriculum. One couple summarized their view in this way:

> *We believe that the time has come to develop integrated, interdisciplinary programmes which emphasize thinking, reasoning, creativity, and recreation. The factual content, which so quickly becomes obsolete, will become subordinate to "learning how to learn"—the beginning of lifelong learning.*

Another individual put it this way in his brief, "The basic premise of the public education system should be to cultivate and nurture a lifelong interest in learning for each individual."

Curriculum is certainly more than the documents prepared by officials of the Ministry of Education and other educators. However, in our view, it is not so broad as to include all of the experiences a child has under the guidance of the school, as some would have it. Curriculum is a statement of intention for students' learning, one which proposes some subject matter or content to be learned. This statement achieves the status of official policy when it is promulgated by elected officials who have the authority and responsibility to declare what students should learn.[4] Curriculum policy should be accompanied by plans for implementation, for teaching, and for evaluating both the performance of students, and for monitoring the effectiveness of the curriculum itself.

Facilities and teaching materials are important co-requisites to a successful curriculum. A school system might have the best curriculum plans in the world; but, unless the facilities for teaching and learning are adequate to the needs of the students, and unless teachers and principals are provided with the materials they need to carry out their tasks in a professional manner, that curriculum might be less than successful. Up-to-date libraries, laboratories, computers, calculators, and textbooks are all needed to make our schools as successful as our students deserve them to be. It is through the interaction of students, with appropriate learning materials and teachers, that the intentions of the curriculum will be achieved.

Questions about what is to be learned, by whom, when, how, and why are all curriculum questions. Answers to these questions, and especially to questions of policy concerning what students should learn, must be based on a set of fundamental beliefs and goals that society holds about education in general, and about schooling in particular.

Many briefs, like the *Let's Talk About Schools* report, address the goals of education in very broad terms. While intellectual development is seen to be the most important function of schooling, there is generally agreement that the child's overall welfare is also to be considered. Briefs specifically mention the importance of concerns such as social development, positive self-concept, and moral standards. These goals of education are spoken of in terms of preparing students to live in a world characterized by rapid change, a world in which they must be able to adapt to change in order to lead full and responsible lives.

2.B A Model for the Investigation

Despite our best efforts to constrain it and make it more amenable to investigation and analysis, the term "curriculum" remains complex and somewhat elusive. We also found that the scope of the task assigned to us was so vast that we had to devise some way of breaking it down into somewhat more manageable pieces. It did not seem possible to us to discuss, in any concrete way, the entire range of curricula offered in the many different kinds of regular and alternative schools that are currently in existence for students spanning the entire range from pre-schoolers to adults.

We finally decided on three major avenues of investigation, and these are shown as the dimensions of the model displayed in Figure 1. This framework or model formed the basis for our analysis of the curriculum, and we found it to be a very fruitful way of organizing, not only the study itself, but also this report.

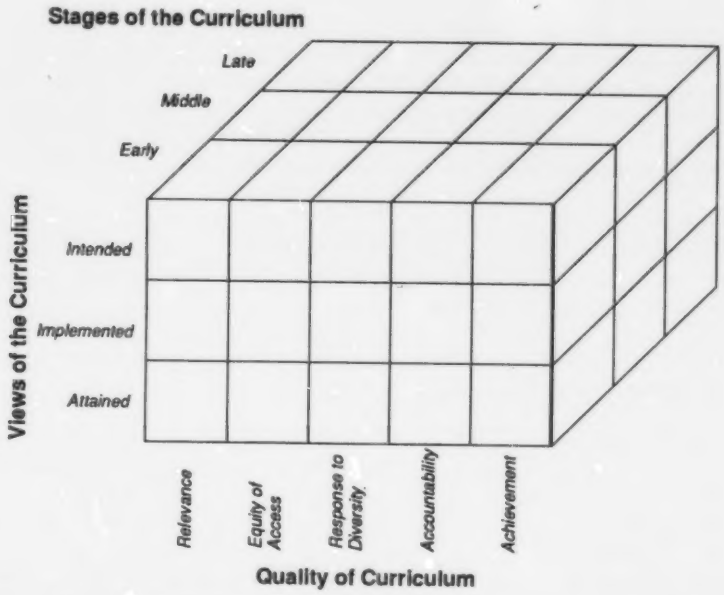

Figure 1. Framework for analysis of the curriculum.

The first dimension of the model is labelled Views of the Curriculum, and it is divided into three sub-categories: Intended, Implemented, and Attained. The second dimension is Stages of the Curriculum, and again there are three subdivisions: Early, Middle, and Late. The third dimension is Quality of the Curriculum, and we have identified five criteria of quality: Relevance, Equity of Access, Response to Diversity, Achievement, and Accountability.

2.B.1 Views of the Curriculum

The model refers to three views of or perspectives on the curriculum: the Intended Curriculum, the Implemented Curriculum, and the Attained Curriculum.[5] What an observer sees as the curriculum, either in general or for a particular subject for a given age level of students, can depend to a very large extent on the level from which the observer views it.

The Intended Curriculum is the curriculum as defined in official publications, regulations, authorized or prescribed textbooks and supplementary materials, and curriculum guides. It is, as the name implies, the curriculum as it is intended by those who are charged with system-wide responsibility at either the Ministry of Education or school-district level.

The Implemented Curriculum is the curriculum as it is interpreted by teachers and brought to life in their classrooms. Differences between the Intended and the Implemented Curriculum are to be expected and, in most cases, encouraged. Teachers are professionals who must make decisions about which content is most appropriate for their students, which teaching materials are best suited to their students and the topic under consideration, and which teaching approach is likely to be most effective. Just as provincial curriculum committees must interpret curriculum policy in order to develop provincial curriculum guides, teachers must interpret curriculum policy, using curriculum guides and other materials as aids.

The Attained Curriculum consists of the outcomes of schooling. What have students learned? What habits of mind and work have they developed? How have their attitudes and dispositions been altered by the educational process? What have they learned to value? What do they know and cherish about our intellectual and cultural heritage? The answers to these and a host of related questions constitute the Attained Curriculum.

These distinctions are important, not only because they represent significantly different perspectives of the curriculum, but because they represent different levels at which reform may be considered. There is an inevitable tension among the three levels because, at each one, the goals are different and frequently at cross-purposes. It is easiest to talk about reform at the system level, where structures and bureaucratic mechanisms can be changed by fiat. Such reform often fails to address the root of the problem, and in fact may cause greater problems at the classroom level. On the other hand, real change in the classroom is more likely to happen when it is facilitated rather than dictated.

Reform undertaken at the system level can contribute to increased tension and lack of communication, at the possible expense of educational goals. For example, the re-introduction of provincial examinations at the Grade 12 level was essentially a political decision undertaken at the system level without consultation with the field. There is evidence that the examinations have had an important influence on the Im, emented and Attained Curricula, on what is taught and what is learned, and that there is a real danger that teachers will restrict themselves to preparing students for what might appear on the final examinations. The important point for this discussion, however, is that the examination programme may have far-reaching and unintended outcomes. Linda McNeill summarizes the dilemma in this way:

> *On the one hand, we expect the school to educate individual children, to enhance their learning, and to improve their ability to learn throughout their lives. On the other hand, the school must process masses of students who must complete a complicated set of steps to obtain a diploma, a credential.*[6]

The point we wish to make is not that reform should never be directed at the system level, but rather that when such a reform is being contemplated or introduced that it be done in full recognition of its ramifications for individual teachers and students. When reforms are being contemplated, facilitating the implementation of those changes at the classroom level should be the first consideration. System-level reforms should support and abet the instructional practices we wish to see implemented in our schools and classrooms; they should make our educational goals more nearly attainable.

2.B.2 Stages of the Curriculum

As children develop physically, intellectually, emotionally, and socially, the educational system must respond to them in ways that are most suitable to their age and level of development. There are many ways in which an educational system might group children for the purposes of schooling; however, the results of most studies of the impact of school structure are neither unequivocal nor compelling. Presently, in British Columbia, students are grouped into elementary (primary and intermediate) and secondary (junior and senior) schools for Grades K to 12.

While the structural organization of the school may not necessarily have much impact on students' educational experiences, the same is not true for organization of the curriculum. It is of crucial importance that curriculum be appropriate to the developmental level of the students, and that it be based on a clear understanding of the kinds of circumstances and arrangements that foster learning in students of various ages. Some of these apply to students of all ages: for example, opportunities for active participation in learning, use of intrinsically interesting materials and topics, provision for students to exercise choice about how and what to learn, a comfortable and friendly environment. Other features of curriculum should change as the age of the students increases: for example, the degree of complexity and abstractness of learning tasks, and the amount of autonomy and responsibility expected of students. These are aspects of the Stages of the Curriculum which we investigated.

2.B.3 Quality of the Curriculum

The third dimension of our framework deals with the quality of the curriculum. Quality is the "bottom line" for the educational system, the overall criterion by which the success of the system should be evaluated. Many different criteria might be employed as indicators of the quality of the curriculum or of the system, and various alternatives were suggested and discussed by the researchers involved in this Royal Commission. For our review of the curriculum, we settled on five criteria which are referred to frequently in the literature, and which cover the kinds of matters one would

expect to find in a discussion of quality in a curriculum. The five are: relevance, equity of access, response to diversity, accountability, and achievement.

Relevance in the curriculum is a quality frequently referred to in the literature as well as in some briefs; however, the term is used in a variety of ways. For us, the curriculum is relevant to the extent that it is useful and meaningful. To be useful the curriculum must reflect a view of knowledge that connotes more than a set of predetermined facts and conclusions being transmitted untouched and unmodified from one generation to the next. The curriculum must be designed to help students become critical thinkers; then it will be useful. Moreover, children must be able to see this usefulness for themselves: The curriculum and its goals must engage students in their learning in order for it to be meaningful to them. Finally, to be relevant the curriculum should be based, at least to a large degree, on the traditional disciplines of knowledge and inquiry. Children do not learn to think in the abstract; they learn to think in appropriately chosen contexts. They have to think about something in order to learn to think, and the disciplines have developed over the history of mankind as the methods that have proved to be most productive in our efforts to make sense of our world.

Children come to school from widely differing circumstances which may affect their ability to profit from the educational experience. We must do what we can to provide equity of access to the benefits of the system for all students, and this will entail differential allocation of resources. It is not enough to say that all children have equal access to the system. They must have equal access to the benefits to be derived therefrom.

Our society is remarkably diverse and the educational system at all levels must respond to that diversity. As the brief from the British Columbia Teachers Federation put it, we should "Celebrate our diversity." Teachers and schools must recognize the diversity that exists in students' abilities, interests, ambition, beliefs, attitudes, and values. Curriculum must be responsive to this diversity by providing variety and choice.

Achievement is often narrowly conceived in terms of test scores: how much has been learned. We need to be concerned about attainment of all the broad goals we espouse for our children, not just intellectual attainments narrowly construed. The Ministry of Education has recently produced a broad statement of goals in its *Image of the Educated Person*[7]. If the Ministry is to be serious about promoting the wide range of attainments implied in this statement, evaluation procedures which address those goals now must be put in place.

Accountability is difficult in education, because so many factors which influence achievement are not under the control of educators or the educational system. Educators must be responsible and accountable for their actions; and the public has a right to know why actions were or were not taken, why decisions were made, and what the consequences were. Such accounting will frequently be very different from the kinds of evaluations provided to students and their parents regarding academic progress.

2.C Conclusion

For our purposes, the curriculum is made up of subjects sub-divided into three categories: Humanities and Fine Arts, Sciences, and Practical Arts. All of the subjects in the curriculum are directed toward increasing students' knowledge, developing their ability to think critically, and promoting the growth of positive attitudes and self-esteem. In the words of Bernard Shapiro[8], Deputy Minister of Education in Ontario, the overall goal of education is to nurture the moral and intellectual autonomy of the young.

To report on and make recommendations about the curriculum in the schools of British Columbia in an adequate manner, a uni-dimensional view will not suffice. Our conceptual framework has three dimensions, each dealing with curriculum from a different perspective. We have identified three views of the curriculum (Intended, Implemented, and Attained), three stages (Early, Middle, Late), and five criteria of quality (Relevance, Equity of Access, Response to Diversity, Achievement, and Accountability). Our hope is that this framework will be adequate, not only for the purposes of this report, but also as a guide for curriculum renewal in the province.

References

1 There is a good deal of controversy about the use of the term "skills" in juxtaposition with "thinking." Some prefer to restrict use of the word "skills" to physical activities, but this seems excessively restrictive. We prefer to use the word in the sense provided by the Oxford dictionary definition of a skill as "a practised ability." Such a definition certainly describes our goal for critical thinking.

2 Industrial Education is increasingly referred to as Technology Education by teachers interested in that area.

3 Jerrold Coombs is a professor of Philosophy of Education at the University of British Columbia.

4 This formulation is taken from an unpublished paper written by Professor LeRoi Daniels of the University of British Columbia.

5 This categorization was utilized in the Second International Mathematics Study. British Columbia was one of the jurisdictions which participated in that project.

6 Linda M. McNeil, "Contradictions of Control, Part 1: Administrators and Teachers," *Phi Delta Kappan* 69(January, 1988): 333.

7 British Columbia, Ministry of Education, Curriculum Development Branch, *Curriculum Goals: Source and Rationale*, 1988.

8 From remarks made by Dr. Shapiro at a seminar on the curriculum organized for the Royal Commission in July 1987.

3. The Current Curriculum

In order to establish a context for the suggested changes to the curriculum which we present in Section 4, we begin by providing a synopsis and critique of the current status of the Intended, Implemented, and Attained Curricula. Our goal is not to present a detailed analysis of the system, but a global portrayal which, although lacking in fine detail, will provide the reader with a sense of what the curriculum is like in the schools of British Columbia and what some of its strengths and weaknesses are.

3.A The Intended Curriculum

The Ministry of Education has taken on primary responsibility for development of the curriculum for the schools of British Columbia. That it is entitled to do so is clear from Section 15 (h) of the *School Act* which states: "... the Lieutenant-Governor in Council may, by regulation, prescribe courses of study, and adopt and prescribe textbooks, and authorize supplementary reading and other instructional materials for use in the public schools."

The *Act* also gives school districts rights and authority in this area. In Section 165 we read, "Subject to the regulations, a Board may approve courses of study, textbooks, supplementary readers, and similar instructional materials for use in the public schools in the school district." Districts have exercised this authority and many locally developed courses are currently in use throughout the province. While approval of locally developed courses is the responsibility of the Board of Trustees, school districts are required to file outlines of all such courses with the Ministry of Education. The most recent compilation of locally developed courses contained more than 800 entries, testimony to their popularity in school districts across the province.

The Ministry of Education has developed a process which it employs as a guide in the development, dissemination, and implementation of new curricula. That process is summarized in Figure 2.

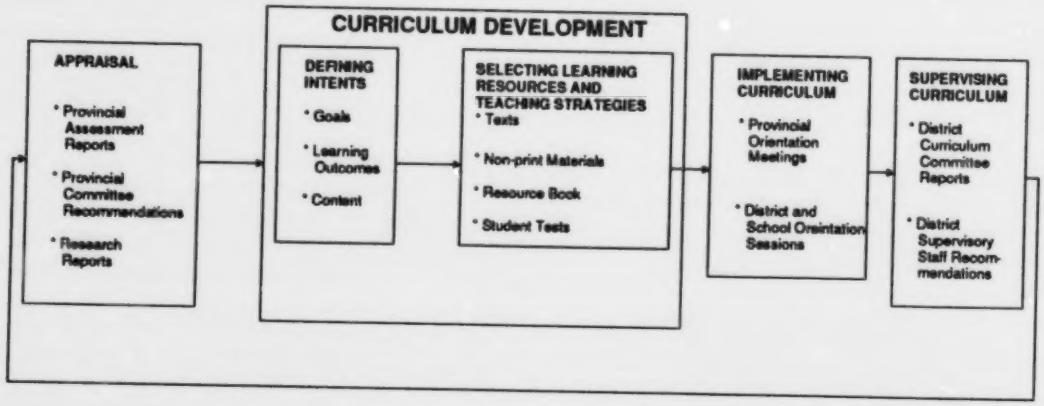

Figure 2. The B.C. curriculum development model.[1]

Most provincially authorized curricula are developed by specialist committees which are appointed for the term of a particular revision project and operate under the general direction of the Curriculum Development Branch of the Ministry of Education, although there are a few exceptions. Curricula for second-language programmes, French immersion programmes, and the *Programme Cadre de Français* are developed under the direction of the Modern Languages Branch. Most special education programmes are modified versions of the standard curricula in those areas, and they are the responsibility of the Special Education Branch. Finally, the Correspondence Branch has responsibility for the design and delivery of correspondence courses.

Learning resources,including textbooks and resource materials for teachers, are usually selected at the same time as the curriculum is developed and by the same committee. Textbooks may either be prescribed, meaning they are basic to the course concerned and appropriate for most students; or authorized, meaning that they may be used as supplements or that they are appropriate for use with special needs students. Audio-visual materials, including video tapes, audio tapes, films, and software, are selected by the Provincial Educational Media Centre, in consultation with teachers in the field.

At the present time, purchasing of textbooks and other instructional resources is centralized, although a recent announcement by the Minister of Education indicates that some degree of de-centralization and re-allocation of responsibility within the Ministry is planned. Centralized purchasing has the advantage of lowering the unit cost through high volume. In addition, this purchasing power allows the Ministry to influence the content of the materials. This practice does, however, take some decision-making authority away from the school districts.

Membership on curriculum revision committees is restricted almost completely to classroom teachers, and the recently completed revision of the mathematics curriculum for Grades 1 through 8 is a case in point. There were three committees set up: one for Grades 1 to 6, one for Grade 7 and 8, and a Coordinating Committee. The two grade-level committees were made up entirely of teachers while the Coordinating Committee included three representatives from the post-secondary educational sector, a school trustee, a classroom teacher, and a principal.

Some writers of briefs suggested that the general public and related professional groups should have an opportunity to influence the curriculum revision process. The Association of Professional Engineers requested an opportunity to be involved in curriculum revision, and they recommended that curricula be revised more frequently. The Forest Council requested that practising scientists be asked to review textbooks and supplementary materials to ensure they were up-to-date and accurate. The British Columbia School Trustees Association recommended that a committee of elected officials called the Provincial Board of School Goals and Curriculum be set up to provide input to the curriculum development process.

Curriculum revision committees are not standing committees of the Ministry of Education; they are appointed on an *ad hoc* basis when a decision has been made that the curriculum in a given area is in need of revision. Typically, a teacher who is a specialist in the subject area is seconded from his or her school district to the Ministry of Education for a period of at least two years to chair the revision committee. It is intended that such seconded teachers will return to their home districts upon completion of the project. In that way, the district stands to benefit from the experience gained by the teacher, and the Ministry will have a steady influx of new talent and ideas.

In practice, relatively few of the teachers or administrators seconded to the Ministry in the past several years have returned to their home districts. Several have stayed on as permanent members of the staff of the Ministry, a few have retired, and others have gone on to positions in different school districts. There is some reason to doubt whether the advantages of the Ministry's policy of secondments outweigh the disadvantages.

It is dificult to maintain a coherent operation when there is little continuity in staffing, and when there are so few members of the professional staff. We believe, as do the writers of several briefs, that the schools would be better served by having permanent, subject-area coordinators appointed to the professional staff of the Ministry of Education. Those coordinators would have continuing responsibility for overseeing developments in their area of specialization and for ensuring that the goals of the curriculum were being addressed appropriately.

In the existing process for curriculum development, there are no explicit procedures for ensuring consistency among committees working on different curricula. Quite recently, in a paper published by the Curriculum Development

Branch, and entitled *Curriculum Goals: Source and Rationale*[2], the Ministry has put forward a set of goals which are intended to indicate to revision committees the overall direction in which they should be heading. The goals are stated as follows:

- *To promote growth in the ability to engage in appropriate forms of inquiry (problem solving, decision making, critical thinking, creative thinking) required in the study of school disciplines as well as in situations of everyday life involving self, family, society (community, nation, world), and the world of work.*
- *To promote growth in a knowledge base relevant to those situations.*
- *To promote growth in a reflective understanding leading to the ability to select and apply skills and knowledge appropriately (in those situations).*
- *To promote growth in a positive self concept based on real competencies and achievements (in those situations).*

The Curriculum Development Branch has established a cycle for curriculum revision, and it contains provisions for continuous monitoring of programmes by advisory committees as well as for periodic, small-scale revisions based on such monitoring. Unfortunately, these plans have, on several occasions, been displaced by political decisions to impose new programmes or initiatives on the system. Recently, for example, great amounts of time, money, and energy were devoted to projects such as the development of courses in consumer education, science and technology, and family-life education; to the re-introduction of Grade 12 examinations; and to programmes such as *Funds for Excellence*, *Passports to Education*, and *Pacific Rim Education Initiatives*. Setting aside for the moment any consideration of the merits of such programmes, it is clear that having to deal with such initiatives on a priority basis causes tremendous difficulties for the staff of the Curriculum Development Branch, and seriously impedes attempts to maintain any sort of consistent plan for curriculum revision, implementation, and evaluation.

The curriculum development process in this province needs to be reorganized. Revisions to curricula should be made more often so that regular intervention and correction, rather than wholesale revision, becomes the norm. Decisions to initiate new programmes should be preceded by an analysis of the impact that the proposed innovation might have on the system, and by consultation with educators and school trustees. Moreover, it must be recognized that implementation of new programmes or directions will require additional funding.

3.A.1 Kindergarten and Pre-School

The current curriculum guide for Kindergarten was implemented in 1984. The goals of that curriculum are to provide a variety of experiences designed to foster the child's

- emotional development and well-being,
- social development,
- social responsibility in a changing world,
- physical development and well-being,
- aesthetic and artistic development,
- intellectual development,
- language development.

The primary emphasis in our current kindergarten curriculum is strongly developmental. Experiential learning, which takes into account the child's personal experience and what we know about how children are developing at this age, is the methodology of choice. Emphasis is placed on the role of play and goals related to the socialization of children. Reading and writing are not explicitly taught, but the curriculum guide encourages teachers to involve children "in emergent reading and writing behaviour."

We believe this emphasis to be appropriate and we would encourage the system to resist any pressure to move more formal learning activities into Kindergarten. As the Vancouver Elementary School Administrators said in their brief to the Commission,

> *Young children learn most effectively through a concrete, play-oriented approach. We should allow for unhurried child development in an enriched setting to avoid tendencies to destroy self-esteem by beginning formal teaching too early.*

This view is shared by many other individuals and organizations. Their briefs contain statements such as "Don't make Kindergarten a mini-Grade 1" and "...All future curriculum needs should reflect basic development needs." One person summarized this point of view by saying that the system would be better served by having Grade 10 become more like Kindergarten, rather than by trying to change Kindergarten to make it more like the later grades.

There is a good deal of support for this point of view in the literature concerning early childhood education and among practitioners. A recent position paper published by the National Association for the Education of Young Children[3] (NAEYC) states that, "The child's active participation in self-directed play with concrete, real-life experiences is the key to motivating meaningful learning in Kindergarten and the primary grades." Later, in the same paper, we find the following remark: "Teachers prepare the environment for children to learn through active exploration and interaction with adults, other children, and materials."

Currently, although attendance at Kindergarten is not mandatory, it is estimated that over 90% of five-year-olds in the province do attend. Moreover, we have seen no evidence that the children who do not attend are those who might be in most need of it. It appears that parents who choose not to send their children to Kindergarten do so mainly either for reasons of their own schedules and convenience—Kindergarten is a half-day programme and this may cause inconvenience to some—or because they believe their child will do better in the home environment.

Pre-school programmes for children below the age of five are not part of the mandate of the Ministry of Education. That responsibility lies primarily with the Ministry of Health, while the Ministry of Human Resources provides some funding and the Ministry of Advanced Education and Job Training sets standards for child-care workers. There are, at the present time, over 2300 licensed child-care facilities in the province, most of which operate in the private sector, and parents must pay to send their children to these pre-schools. The net effect of this is that many of the children who might benefit most from attending pre-school are effectively excluded from them.

A number of briefs from individuals and organizations, from educators as well as non-educators, recommended that pre-school programmes become much more widely available and accessible. They recommended that participation in pre-school remain optional, at the discretion of parents, but that there be a variety of flexible arrangements made available to provide suitable placements for children from widely different backgrounds and at different stages of development.

A brief presented by the Ministry of Social Services and Housing recommended that pre-school, daycare, and Kindergarten programmes all be available in the same building, or in close proximity to one another. It also referred to the need for extending special services below the Kindergarten level and for inter-ministry cooperation in the area of early childhood education.

A brief presented by a consortium of community groups interested in multiculturalism recommended that pre-school and Kindergarten programmes be available in a variety of languages. They referred to research results which indicated that young children should gain competence in their mother tongues before attending school in a second language: in this case, English.

3.A.2 Elementary School

The Administrative Handbook[4], includes time allocations for all of the subjects and programmes offered by elementary schools in the province. Those allocations are based on a recommended weekly maximum of 1500 minutes, or 25 hours. Of that total, at least 1325 minutes are to be allocated to the teaching of prescribed curricula, while the remaining time is to be divided between locally determined programmes, 100 minutes, and recess, 75 minutes.

There is considerable pressure on individual schools and on the system as a whole, to make room in the curriculum for new programmes and initiatives. Each time students are judged to be lacking in certain skills or knowledge, a new

course is proposed to provide instruction in the area. Some people have recommended that the school system accommodate those requests by lengthening the school day, thereby providing additional time for new courses or programmes without cutting into current allocations. We do not find the arguments in favour of lengthening the school day compelling, and would argue instead that every effort be made to make the most efficient use of the time currently available. The research literature concerning "time on task"[5], that proportion of the school day when students are actively occupied with quality educational activities, makes two important points. First, it indicates that such time is positively correlated with achievement; and, secondly, it makes it clear that there is considerable room for improvement in the proportion of time utilized in this way in many classrooms.

The amounts of time allocated to fine arts and physical education remain constant throughout the grades. This is also the case for locally determined programmes and for recess. In other subject areas, the amount of time varies somewhat from grade to grade, with the largest variations occurring in language arts and mathematics. In Grade 1 language arts is allocated 715 minutes per week, well over two hours per day and about 50% of the total.[6] By Grade 7, that allocation has decreased to 420 minutes, or 29%. The situation for mathematics is the reverse. In Grade 1, mathematics is allocated 170 minutes or 12%. By Grade 7, that allocation has increased to 245 minutes per week, 17% of the total.

The graph in Figure 3 portrays the time allocations for the elementary programme, averaged across Grades 1 to 7. It shows, for example, that language arts is officially allocated an average of 42% of the 1425 minutes of instructional time available each week in Grades 1 through 7. Social studies is allocated an average of 7%.

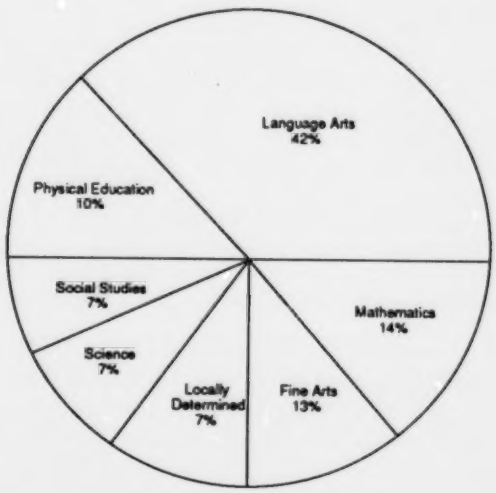

Figure 3. Average time allocations, Grades 1 to 7.

We believe that these time allocations reflect a fragmented view of what it is children are meant to be doing in school, and that it contributes to the problem of an overcrowded curriculum and timetable. While we realize, from our observations in classrooms, discussions with teachers, and our own experience, that there is actually much more integration across subjects than these time allocations indicate, we are still concerned about this fragmented view of the Intended Curriculum. We are particularly concerned about the fact that language learning, apparently decontextualized and removed from the study of social studies or science, for example, commands such a large amount of the time available: over 40% of the instructional time in each year of the elementary school curriculum.

This does not mean that we question the importance of language development and doing everything possible to ensure that our children learn to read, write, and express themselves orally. We support those goals wholeheartedly. We do have serious reservations, however, about the efficacy of attempting to develop those skills and abilities in decontextualized settings. A recent study concludes that,

> *...the manner in which children are taught to read and write is related to the conceptions that children hold and take into subsequent literary experiences. If they are taught to read and write in a way that emphasizes correct decoding or encoding of small units of language, they tend to view reading and writing as a process of saying the words in texts correctly or spelling the words correctly with little regard for meaning. Conversely, if children are taught to read and write in a way that emphasizes the apprehension and use of meaning, they tend to see reading and writing as purposeful and meaningful activities.*[7]

Learning to read certainly involves the development of skills; but, much more importantly, learning to read must take place in a meaningful setting. We read to explore good literature; we read to enjoy stories; we read to learn. The more skillful we become at reading, the more we realize the objectives we strive to attain.

Finally, we are concerned that the current time allocations make no mention of several important areas. No time is allocated to the teaching of French as a second language, of health-related issues, or of practical arts such as home economics and industrial education except as part of the very small amount of time which is available for discretionary use at the local level.

3.A.3 Secondary School

Secondary school in British Columbia consists of Grades 8 through 12, and most secondary schools include all five grades. However, in some schools, the grades are separated into different buildings: Grades 8 through 10 in junior secondary, and Grades 11 and 12 in senior secondary schools. The number of such schools has been decreasing, and there has been a trend in many districts toward consolidation of all five secondary grades in the same building.

The organization of the secondary school curriculum is considerably more complex than that of the elementary school. Secondary schools are authorized to offer many different courses and programmes so that students can pursue studies in their areas of interest and satisfy graduation requirements in a variety of ways.

The number of courses a student takes each day is determined in large part by the organization of the timetable in the school. Many schools operate on a "five by eight" timetable which means that each student takes a maximum of eight courses and receives instruction in five of those courses each school day. Students take both required and elective courses, and the balance between those two varies from year to year.

In Grade 8, students are required to take five constant courses: English, Mathematics, Social Studies, Science, and Physical Education. Grade 8 students must also take French, one of either Home Economics or Industrial Education, plus another elective, usually a fine arts elective such as Music, Art, or Drama. In Grades 9 and 10 the same five constant subjects are required, and the rest are elective. In Grade 11, students are required to take English, Social Studies, Mathematics, and Science. In Grade 12, English is required. The rest of a student's timetable is made up of elective courses. A minimum of 10 hours of family life education is required in each year, and all students must take the prescribed Consumer Education course some time before graduation. *The Administrative Handbook* summarizes the programme in the following way:

> In grade eight—a required common program with some flexibility as indicated.
>
> In grades nine and ten—a required common program including some authorized alternatives and augmented by electives designed to permit the exploration of a number of fields of interest preparatory to making specialization decisions for grades eleven and twelve.
>
> In grades eleven and twelve—a limited required common program including some authorized alternatives augmented by sufficient specialty electives designed to qualify the student for graduation and/or entry to post-secondary education and/or employment.

A summary of the courses students are required to take each year is shown in Table 1.

Table 1
Summary of Required Courses

Subject	*Required in Grade*				
English	8	9	10	11	12
Social Studies	8	9	10	11	
Physical Education, Health, & Guidance	8	9	10		
Mathematics	8	9	10	11	
Science	8	9	10	11	
Consumer Education		9 or	10 or	11	
French	8				
Industrial Education or Home Economics	8				
Music, Art, or Drama	8				
Three Grade 12 electives (Provincially authorized)					12 12 12

Courses are organized in modules of 120 hours[8], and this constitutes a fundamental difference in the organizational pattern of the secondary school as compared to the elementary. Elementary schools are directed to weight different subjects differently: much more time is assigned to English than to social studies. This is not the case with secondary schools. Within a given year, all subjects are given the same weight. There is some variation from year to year, but not within each year. Thus at the Grade 8 level, eight courses are required and each is allocated 120 hours of instructional time.

The current system appears to operate more or less successfully for children in the first several years of their school careers, and for those at the senior secondary level who are preparing for university entrance. In between there are problems; and it is during this period, between the ages of approximately 12 and 16, that many students come into conflict with the school system. Many adolescents find school boring and irrelevant, and too many of them drop out of school. With few alternatives outside of school available to them, many end up feeling alienated from both school and society.

Possible sources of such problems are not difficult to discern. In fact, it is rather surprising that the numbers of children who become disillusioned and decide to drop out are not greater than they are. The elementary school programme is, to a large extent, child-centred. When a student enters Grade 8, or earlier in some cases, the emphasis begins to shift from a focus on students to a focus on the curriculum, and on organization and administration.

We are particularly concerned about the shift from elementary to secondary school: the move from Grade 7 to Grade 8. Grade 7 students usually have one teacher who teaches them most, and sometimes all, subjects. There is a degree of specialization among teachers in some elementary schools, but even in such cases the number of different teachers that a given student has to interact with is small.

The situation in the secondary school is radically different. Students in Grades 8 through 12 may have as many as eight teachers in a year, one for each subject. The curriculum consists of distinct subjects, with no obvious connections drawn between them, and the school day is fragmented into separate blocks of time. Although secondary teachers are certainly concerned about the welfare of the students they teach, the fact that each of them may teach more than 200 students makes it difficult to get to know individuals well.

3.A.4 Alternative Programmes

A number of alternatives to the standard curriculum have been developed by school districts or the Ministry of Education to respond to the requirements of students who have special needs, aptitudes, or interests. Such programmes are offered in elementary and secondary schools, but they are quite distinct in character from the regular programmes offered in those schools.

Special Education Programmes and Services. Programmes for students with special needs are provided in every school district, although not all districts are able to provide services for every child under their jurisdiction. In the latter case, students are accommodated in districts other than their own or in provincial resource centres. Special education programmes are offered in each of the following areas: "Gifted ; English As a Second Language (ESL); Severe Behaviour Disordered; Learning Disabled; Mentally, Physically, or Sensorily Handicapped; Communication Disorders; Native Indians."[9] Many alternative high school programmes, designed for adolescents who are at odds with the system, are run by school districts using funding from Special Education.

French Programmes. Four programmes are currently available: *Programme Cadre de Français*, early French immersion, late French immersion, and secondary French immersion. All of these are in addition to French as a second language which is available at the elementary level in most districts, and in all secondary schools. The *Programme Cadre de Français* is intended for francophone students, and is the francophone equivalent of the regular curriculum. The programme is offered in districts where parents request it, and where sufficient numbers of students are available to justify offering it.

Career Preparation Programme. This programme is designed to prepare students for direct entry into the job market or to career programmes at the post-secondary level in any of eight specialty areas. The programme includes on-the-job training.

Cooperative Education. This program involves schools cooperating with employers in the planning, delivery, and evaluation of training for students. It is generally far more extensive than career preparation and work experience programs—a minimum of 200 hours of training is required on the worksite.

Correspondence Education. Programmes ranging from Kindergarten to Grade 12 are available by correspondence, and over 30,000 course enrolments have been reported by the Ministry of Education. The courses are designed to provide access to programmes to students who live a long distance from school, who have prolonged illnesses, who live abroad, or who attend a school where a course of their choosing is not available. The programme is administered by the Correspondence Branch of the Ministry of Education.

International Baccalaureate. This two-year programme offered at the senior secondary level is designed primarily for academically gifted students. Schools wishing to offer the International Baccalaureate programme must first be accredited by the International Baccalaureate of North America, the governing agency. The programme is currently offered in about 15 schools in British Columbia, and there appears to be a growing demand for it.

Native Indian Education. The Native Indian Education Programme is a special programme, over and above the regular curriculum, for Native Indians. The Ministry encourages development of local curricula which can be incorporated in the curriculum of the school to reflect Native Indian culture, history, and contemporary life.

Community Schools. A number of school boards designate certain schools as community schools and they are usually provided with additional staff and funding. A community school is expected to develop links to the community and to function as a focal point for community involvement.

The Adult Secondary School Programme. This programme provides a core of general education in English, social studies, and mathematics while allowing the student a choice of at least four elective courses drawn from the senior secondary curriculum. Students must be 19 to be eligible for admission and previous work experience may be accepted for credit.

Locally Developed Courses. School districts may develop and offer courses appropriate to the needs of the local community. Locally developed courses may not be used as Grade 12 electives to satisfy graduation requirements; and, since most provincially authorized Grade 12 electives have Grade 11 prerequisites, students in the senior grades are prevented from taking more than one or two locally developed courses.

Locally approved "advanced placement" programmes, modelled on the Advanced Placement programme in the United States, are being offered in an increasing number of schools in the province. Advanced placement courses are available in mathematics, computer science, and some of the physical sciences. They are sometimes accepted for advanced credit or advanced standing by universities.

Summer School. School boards may offer provincially authorized curricula in summer schools. Courses must be taught by teachers as defined in the *School Act*, and will be funded if they are provincially prescribed or authorized programmes.

3.A.5 Independent Schools

In 1977, in recognition of the importance of independent schools in providing an alternative form of education for the children of the province, the government passed *The Independent Schools Support Act*[10] which authorized the government to make grants to those independent schools which chose to apply and met the requirements of the Act. According to a Ministry of Education publication entitled Independent Schools 1986/87, independent schools may be categorized into six general categories according to their philosophies of education and objectives. The six are:

- The Catholic Public Schools
- The Society of Christian Schools
- The Independent Schools Association
- Seventh-Day Adventist Schools
- Association of Independent Church Schools
- Non-Aligned Schools

In the 1986-87 school year, independent schools enrolling over 28,000 students[11] qualified for support under what is now called the *School Support (Independent) Act*. Enrolment in these schools is predicted to increase at the rate of 6% per year over the next four years.

3.B The Implemented Curriculum

We know from the literature, from our observations and interviews, and from briefs submitted to the Commissioner that there often are considerable differences between what is prescribed by the central school authority in curriculum guides, resource materials, or textbooks and what is actually taught in classrooms[12]. In many instances such differences are the result of the application of professional judgement by teachers as they attempt to provide the best education they can for their students. Teachers are to be encouraged to make such decisions; indeed, they are an important part of teachers' responsibilities. At the same time, however, teachers are obliged to ensure that they exercise their professional judgement in ways that are consistent with provincial policies.

Almost all of the data on what is actually taught in British Columbia classrooms comes from questionnaire data, and mainly from surveys conducted as part of the Provincial Learning Assessment Programme. Some studies conducted here and elsewhere have included classroom observations, but these are comparatively few in number and tend to be rather small scale. Partial information on the Implemented Curriculum is also available from the Ministry of Education and from school districts through the accreditation programme and records of innovative programmes funded by the Funds for Excellence or Programme Effectiveness grants. However, this kind of information is not highly detailed. Almost all of the data we have on what goes on in classrooms comes from such secondary indicators as students' performance on examinations and tests, and the kinds of questionnaires mentioned above.

We need more and better information about what happens in classrooms where the curriculum is actually implemented. That is not to say that we need harbour suspicions that teachers are being derelict: quite the contrary. We need to know how teachers implement programmes successfully, how they decide what topics of content are or are not appropriate for their students, how they decide which instructional practices to employ and why, and how they cope with the broad range of abilities, interests, and attitudes of their students.

Much of what goes on in classrooms is outside the control of either the classroom teacher or the school. There is a good deal of control exercised at the level of the system as a whole, and teachers must work within these constraints. Schools and teachers have little flexibility with respect to time allocations, especially at the secondary level. Even the fact that the curriculum is specified in terms of separate and apparently disconnected subject areas is a serious constraining factor that stands in the way of teachers' wishes to take an integrated approach in their teaching. Other factors, including provincial examinations at the Grade 12 level and highly specific requirements to be met for graduation, limit the range of options available to teachers and students.

3.B.1 Semestered Programmes

In some secondary schools in the province, courses are offered on a semestered basis. This arrangement of the timetable is virtually unique to British Columbia, especially in Grades 8 through 10. Semestered courses are offered over half the school year: either September to January, or February through June. For example, a group of Grade 9 students might study Science 9 in one timetable block during the first semester, and that course would be completed in January. During the second semester, they might take Social Studies 9 during that block of time.

There are a number of variations of semestered programmes. In some schools, all courses are offered in semestered form; in others, some courses are semestered while others are not. Grade 8 students in a fully semestered school would typically study four subjects each semester, with each course meeting for approximately 75 minutes per day in order to meet provincial time-allocation guidelines. In partially semestered schools, courses such as English and mathematics are commonly offered on a year-long basis, while others are offered in semestered form.

Proponents of the semestering system argue that it is easier for students to have only four or five courses to concentrate on at one time. Moreover, they point out that a student who fails to complete a course successfully in the first semester may be able to make up for that failure in the second semester and not lose a whole year. Opponents of semestering claim that the lengths of daily classes in semestered courses are much too long, and that students would learn more if classes were shorter and there were more of them. In other words, the fact that the amounts of class time are more or less equal in semestered and non-semestered courses[13] does not imply that students have an equal opportunity to learn. Recent evidence indicates that the performance of students in semestered courses is not as good as that of students in non-semestered ones.[14]

Our concerns with semestering are focused on the junior secondary level. The practice is much more common and, to us, more reasonable in Grades 11 and 12 where semestering can provide additional flexibility. For students who are on work experience or co-operative education programmes, semestering of school-based courses might even be necessary.

3.B.2 Streaming

The practice of streaming students into different classes for one or more subjects on the basis of some measure of ability or aptitude is another arrangement about which we are concerned.[15] Streaming is very prevalent in junior secondary schools in the province, but a number of elementary schools group students in this way for certain subjects. Although streaming occurs in several subject areas, it seems to be most widely used in mathematics classes.

The effects of various arrangements for streaming of secondary school students have been studied extensively, and the findings of this research are quite unequivocal.[16] The only type of streaming that appears to benefit students is streaming of high-ability students. Placing all students categorized as low ability, whether in one subject or more, together

for instruction has been shown to be particularly ineffective because the gaps between students increase rather than decrease.

A justification frequently given for streaming or homogeneous grouping by teachers is that their teaching will be more effective if the range of ability of their students is narrower. This might be true if it were possible to narrow the range of ability to a significant degree, but it is extremely unlikely that this could be done within a single school and without the use of sophisticated assessment procedures. Many junior secondary teachers believe that the content of the mathematics curriculum at that level is inappropriate for students who are not planning to attend university or college. The danger is that streaming will severely limit the range of programmes and careers available to students.

There are no system-wide mechanisms in place for streaming of students since the practice is not recommended in curriculum guides. Each school or district wishing to stream students develops its own method for doing so. The result is that there is tremendous between-school and between-district variation. Students streamed into one programme in School A might be categorized quite differently in School B. Moreover, within a given school there is a very real danger that children will be mis-categorized because of the weakness of the measures on which the categorization is based.

Research has demonstrated that all students, regardless of ability, benefit where heterogeneous grouping of students is practised: that is, when students are assigned to classes and courses on a more or less random basis. Practices such as peer tutoring and cooperative learning have been shown to be effective with such heterogeneous groups, and teachers should be encouraged to adopt them. The really crucial point is that we must not close doors on students prematurely or on the basis of unreliable measures.

3.B.3 The Implementation Process

Teachers who have not had adequate preparation, either academic or professional, with respect to new curricula or instructional practices are unlikely to have either the commitment or the capacity to implement the change as intended. Ensuring that new curricula are disseminated and implemented appropriately, in line with the objectives of the programme, depends to a great extent on whether or not teachers have the opportunity to gain familiarity with them in advance.

While the Minister of Education is responsible for ensuring the quality of school programmes in the province, school districts are responsible for implementing the programmes developed by the Ministry's Curriculum Development Branch. Officially, decisions about what students and teachers do to achieve the intended learnings prescribed in curriculum guides are made by teachers and principals. For its part, the Ministry has traditionally provided curriculum orientation sessions designed to familiarize teachers and principals with new or revised programmes.

Between 1978 and 1983, through its Programme Implementation Services Branch, the Ministry provided additional support for programme implementation in the form of consultations, workshops, planning sessions, resource sharing and other forms of networking, and inservice materials related to new and revised programmes. In spite of its very small staff (three people), this Branch made a major contribution to curriculum implementation throughout the province. Unfortunately, however the Branch was closed early in the provincial restraint programme, and Ministry support for implementation was reduced to providing curriculum orientation sessions.

Currently, many of these orientation sessions take the form of one-week Summer Institutes at which teachers gather in various centres around the province, frequently in cooperation with one or more of the three Faculties of Education. Each school district regardless of size is invited to nominate two teachers to attend the institute. The expectation is that these teachers will help introduce the curriculum innovations they learn about at the institute into their home districts during the following school year.

There is no information about how well this scheme works, but studies of curriculum implementation in the literature suggest that it likely has minimal impact. The farther away a teacher is from the source of a curriculum change, the less likely the teacher is to integrate the change into his or her teaching. While the people who participate in developing a new curriculum and those who attend the Summer Institutes about it are likely to be eager adopters of the change,

other teachers may be more hesitant to alter their programmes for the sake of an innovation in which they have no particular stake.

The Curriculum Development Branch does attempt to provide teachers with some opportunity to contribute to decisions about curriculum change by circulating drafts of proposed curriculum revisions. However, this is a weak form of participation, the effects of which are unknown.

School districts and the British Columbia Teachers' Federation, as part of the inservice programmes they have traditionally provided for the professional development of teachers, also offer introductions to new or revised provincial curricula. At the encouragement of the Programme Implementation Branch, each district was to develop its own curriculum implementation plan, and this has occurred to some degree, but not in every district. What has recently been initiated through the Curriculum Development Branch is a network of regional representatives who plan, in cooperation with the Branch, one-day and half-day orientation sessions in each of the eight zones in the province.

Effective curriculum implementation requires that teachers understand the intent of the new curriculum and that they receive constructive feedback during their initial attempts to integrate the new curriculum into their classroom. These requirements go far beyond the provision of information and materials about a new programme. They require more than a single-session introduction to a new curriculum, which the vast majority of inservice sessions are.

As was confirmed by the Auditor General's recent audit of the Curriculum Branch (1988), implementation is the weakest link in the cycle of curriculum development and renewal.

3.C The Attained Curriculum

A great deal of information about the Attained Curriculum is collected at every level of the educational system. Teachers report to parents about their students' progress. Principals report to their district offices on a variety of educational indicators, and much of this data is transmitted to the Ministry of Education where it is aggregated to the provincial level. The Ministry collects information regarding the Attained Curriculum in its own right through programmes such as the Provincial Learning Assessment Programme, the provincial school-accreditation programme, and Grade 12 examinations.

Most of the information we have about the Attained Curriculum at the level of the entire system is obtained from four main sources: results from Grade 12 examinations, standardized tests, the Provincial Learning Assessment Programme,and, on a much more limited basis, international studies. On the whole, results from all of these sources can only be described as positive. They indicate that students in the schools of British Columbia are performing well on these kinds of evaluations, limited in scope though they may be.

We particularly wish to point out the almost total concentration on academic or content objectives in evaluation programmes like these, and the lamentable lack of attention to attitudes, dispositions, and the myriad other attributes we value and respect as hallmarks of an educated person. Unless and until we do a much better job of gathering data on students' progress with respect to attainment of such goals, we will not be doing an adequate job of assessing the status of the Attained Curriculum.

In the following subsections dealing with what we know about what students are learning in our schools, we have relied exclusively upon primary indicators. We have chosen not to consider a great many variables such as class size, qualifications of teachers, numbers of books in libraries, socio-economic status, or administrative climate of the school which previous research has linked to some aspect or other of the Attained Curriculum. This is not to say that these variables are unimportant. However, in the absence of a clear mandate for the schools, it is not possible for us to gauge the importance of variables such as these.

3.C.1 Grading Practices and Reporting to Parents

Classroom teachers prepare periodic reports for parents on the progress that their children are making and, for most parents, this is the only information they receive about the Attained Curriculum, other than from occasional reports in the media. In some schools, and especially at the elementary level, reports to parents consist largely of anecdotal comments by teachers who wish to emphasize each individual student's progress in relation to past performance, rather than to some external standard or relative ranking. This kind of reporting can be extremely useful to students, to their parents, and to teachers for planning purposes. Because of its relatively subjective and idiosyncratic nature, this kind of reporting is not very useful for comparative purposes of any kind: between students, between classes, between schools, or between districts.

Letter grades, percentage scores, or some combination of both are much more the rule in secondary schools. This represents a shift away from an emphasis on each student's progress as an individual to a more or less uniformly applied standard. A student must obtain a minimum grade in a course in order to pass or be allowed to register for the next course in the sequence. Letter grades and numerical scores may seem to be more objective and more accurate than anecdotal comments, but this objectivity is more apparent than real. Unless different teachers use the same assignments, quizzes, and tests as a basis for determining those grades, they are not any more comparable than anecdotal, non-numerical comments.

As anyone who works with measurements of any kind knows, perhaps from having cut the last available piece of expensive lumber or material too short, there is always a certain amount of error and inaccuracy associated with the measurement process. This fact applies to measuring acquisition of intellectual attainments in exactly the same way as it does to measuring the amount of anything else, except that an error in educational measurement can have extremely serious consequences for a child's future, in school as well as out.

3.C.2 Grade 12 Examinations

Grade 12 examinations were re-introduced in British Columbia in 1983, after having been discarded in the early 1970s. Similar actions have been taken in other provinces in the recent past, and there are indications that secondary school leaving examinations will be re-introduced in still more provinces within the next few years. Two provinces, Québec and Newfoundland, never did abandon the practice and continue to employ such tests as part of their evaluation schemes. In British Columbia, responsibility for the Grade 12 examinations belongs to the Student Assessment Branch of the Ministry of Education, and an independent Board of Examiners has been appointed by the Lieutenant-Governor in Council to oversee the programme.

Re-introduction of the provincial examinations was essentially a political decision. There was certainly no pressure from within the system to do so. Indeed, many teachers and other educators initially expressed opposition to their re-introduction. That resistance has gradually waned and the programme has gained wide acceptance, or at least compliance.

The decision to re-introduce Grade 12 examinations was well received by the general public, and several briefs underscore the positive response to that decision. The brief submitted by the Association of Professional Engineers includes an indication of their support for such examinations. One particularly enthusiastic supporter said that "provincial exams were one of the best things to happen to B.C."

Of course, not everyone is supportive of the idea. A student from Cranbrook said that, "The present system for provincially administered final exams is an unrealistic measure of the student's true skill, and is valued far too highly in terms of the student's final mark." An anonymous brief stated categorically: "Get rid of government exams. They're destroying teaching programmes and have too much weight."

One particularly contentious issue with respect to the Grade 12 examinations concerns the weight that should be given to a student's score on the provincial examination as opposed to the grade awarded by the school, in arriving at that student's final grade for a course. The current split is 50-50, and there have been a number of recommendations to

change that division to accord more weight to the school mark than to the final examination. The most common recommendation for the relative weighting is 60-40.

A second issue, also related to the relative weighting to be attached to school and examination marks, concerns differences between marks awarded by the school and those obtained on a provincial examination. Some are of the opinion that there should be a strong correlation between the two, and that instances where significant differences between the two grades are found need to be investigated.

Such a posture does not reflect the thinking that went into the re-introduction of the examination programme. The reason that the school mark is to be taken into account derives from an acknowledgment that a provincial examination cannot hope to evaluate all of the objectives of a course. The fact that such examinations are one-shot affairs with fairly restrictive formats makes it obvious that they are not as useful as other means of evaluation available to teachers for assessing students' mastery of many important educational objectives.

Thus, the provincial examinations in the physical sciences do not take into account students' performance in laboratory situations; the English 12 examination does not evaluate students' speaking ability; and the French 12 examination has no oral component. These and other important intended learning outcomes are to be evaluated through the marks awarded by the school, and there is every reason to expect that there will be differences between those grades and the ones obtained on the examination. Both grades may be completely valid and reliable yet different because they are not measuring the same things.

Third, there is a widespread concern that the content of the examinations has unduly influenced the curriculum, and that teachers teach only what is considered likely to be tested. We need to be aware of such concerns, but they need not be feared as inevitable outcomes. We can rely on the professionalism of teachers and the common sense of those responsible for the examination programme to guard against that sort of excess. Educational systems in almost every country in the world have some form of national examinations, and many of those systems we hold up as paradigms of educational excellence.

In the same vein, provincial examinations are criticized for focusing only on that which is easy to test: recall of factual information, application of routine algorithmic procedures, and the like. Several briefs expressed such concerns. For example, the brief submitted by the Nelson District Teachers Association contained a recommendation that "provincial examinations emphasize higher level reasoning skills rather than short term retention of facts."

There is no reason why provincial examinations need be limited to testing lower-level cognitive behaviours, and we believe that the examinations currently being produced by the Student Assessment Branch are not limited in that way. They do attempt to test higher-level behaviours as well. No doubt this is more difficult to do, and we need to know more about ways of testing such behaviours. However, on the whole we are satisfied that those now involved in the preparation of the Grade 12 examinations[17] at the current time are making attempts to ensure they do not focus too heavily on content objectives to the virtual exclusion of process objectives.

The provincial examination programme is, by some standards, relatively expensive: approximately 2.5 million dollars per year. However, it may require even more money to do the job well, and to address the legitimate concerns raised by critics of the programme. The Student Assessment Branch, which is responsible for developing and administering the examination programme, seems to us to be under-staffed and under-funded.

3.C.3 The British Columbia Norms Project

In 1980, the Educational Research Institute of British Columbia (E.R.I.B.C.)[18], conducted the *B.C. Norms Project* for the Ministry of Education. The objective of the project was to develop norms for some well-known standardized tests which are widely used in Canada and the United States. Having a set of norms to use as a standard makes it possible to interpret test results, not in an absolute way, but relative to the performance of a comparison group.

Two tests were selected: the *Canadian Tests of Basic Skills* for Grades 3 and 7; and the *Stanford Achievement Test* for Grades 3,7,and 10. Each of these instruments measures such basic skills as vocabulary, reading comprehension, and mathematical problem solving.

Results obtained by E.R.I.B.C. indicated that students in British Columbia scored higher than their counterparts composing the norm groups in either the United States or Canada. That is to say, the average levels of performance exhibited by British Columbia students on these tests exceeded those of the comparison groups used to establish norms in other North American jurisdictions.

3.C.4 The Learning Assessment Programme

In the mid-1970s the Ministry of Education established the Provincial Learning Assessment Programme as a means of monitoring the performance of the system. The major goals of the Learning Assessment Programme are the following:

- *to inform professionals and the public of some of the strengths and weaknesses of the public*[19] *school system;*
- *to assist the Ministry, school districts, and schools in decisions related to the development, review, modification, revision, and implementation of curricula and supporting instructional resource materials;*
- *to assist the Ministry in decisions concerning allocation of resources;*
- *to identify areas of need and provide directions for change in both pre-service and in-service teacher education and professional development;*
- *to provide directions for educational research;*
- *to monitor student learning over time; and*
- *to provide the province, school districts, and schools with information which can be used to maintain strengths and overcome identified weaknesses.*[20]

Subjects in the curriculum are assessed according to a cycle set up by the Student Assessment Branch in cooperation with the Curriculum Development Branch. Usually one subject area is assessed each year, but there have been several instances where two areas were evaluated during the same school year. Since the inception of the programme, one or more assessments have been conducted in each of the following areas: reading, writing, mathematics, science, French, social studies, physical education, and Kindergarten.

The evaluations are designed and carried out by teams of consultants under contract to the Ministry. The teams are typically composed of university-level experts in the field being assessed, classroom teachers familiar with the curriculum, and specialists in research design and data analysis.

In other jurisdictions which have evaluation programmes of this kind, it is customary to test only a small sample of students in each evaluation, since the goal is to obtain data on performance of the system as a whole rather than of individual students or schools. In British Columbia it has been the practice to test all students at each of the grade levels involved, usually Grades 4, 7, and 10. One reason for this is that the programme was designed from the outset to provide information at the school district as well as the provincial level. Many districts in this province are so small that use of a sampling model would be impractical. Another more recent reason is that Learning Assessment results are now available at the school level where they may be used for local programme planning.

Students' performance on each Assessment is adjudicated by Interpretation Panels set up by the Ministry. Panelists include parents, members of the business and professional communities, and educators. The task of the Interpretation Panels is to examine the performance levels demonstrated by students and, in the absence of pre-established criterion levels, to determine whether those performance levels are satisfactory or not. On every Assessment, the Panels have declared students' performance levels to be generally satisfactory or better, although a number of areas of weakness have been identified.

In the most recent Reading Assessment[21], the Interpretation Panels reported that the performance of students in all three grades tested (Grade 4, 7, and 10) was satisfactory or better in every domain tested. These were understanding

words and expressions, literal comprehension, inferential comprehension, critical comprehension, and ability to use and locate information.

The report of the 1985 Mathematics Assessment[22] indicates that the performance of Grade 4 and 7 students was generally satisfactory and somewhat better than was reported in the 1981 study.[23] The results for Grade 10 were less positive, and the report contained a number of recommendations for change at that level. Students at all three levels were tested on the following areas: number and number operations, geometry, measurement, algebraic topics, probability and statistics, computers and calculators, and problem solving.

The 1986 Science Assessment[24] evaluated the performance of students in Grades 4, 7, and 10 on the following topics: science processes, knowledge of science concepts, critical thinking, technology, the nature of science, and safety. Grade 4 students' performance was rated less than satisfactory on critical thinking, and satisfactory or better on each of the other domains. Grade 7 performance was judged to be satisfactory on science processes, and less than satisfactory on the other five. At Grade 10, the situation was the opposite: less than satisfactory on science process, and satisfactory on the other five.

Some of the Assessment instruments have included items taken from tests developed in other jurisdictions: for example, a number of items used in evaluations conducted as part of the National Assessment of Educational Progress in the United States have been used here. On such items, students in British Columbia have consistently demonstrated levels of performance superior to those of their counterparts in other jurisdictions.

Provincial Assessments have typically gone beyond testing students' knowledge of a particular subject to include evaluations of students' attitudes and opinions, and to collect information about their backgrounds, interests, and future plans. In addition, questionnaires are customarily administered to teachers concerning instructional practices and their opinions about the curriculum.

One of the drawbacks of the Learning Assessment Programme is that each Assessment takes so long to complete. Fifteen months is the minimum amount of time needed, in the major subject areas, from the date when the contract is let until the final report is received by the Ministry. A second drawback is that each major subject area is reviewed at best at four-year intervals. The system would be better served by having some information collected every year.

Each Assessment is an undertaking of major proportions, usually with over 100,000 students and their teachers taking part. There is some room for doubt whether the nature and amount of information they produce is worth their cost in time and money. The Ministry is apparently conducting a review of the assessment process at this time, and we will have some suggestions to offer in this regard in Part 4.

3.C.5 International Studies

The Student Assessment Branch of the Ministry of Education is a member of the International Association for the Evaluation of Educational Achievement, better known as IEA. This is an international consortium of government agencies and research institutions in over fifty countries throughout the world, and it has conducted several comparative surveys of educational practices and outcomes in the last 25 years. In addition to British Columbia, Ontario and Québec are also members of the organization. In the past ten years, British Columbia has participated in two major IEA projects: the Second International Mathematics Study[25] and the Second International Science Study[26], although our participation in the science study was as part of a Canada-wide sample so that results for British Columbia students are not available separately.

IEA studies are not intended to serve as international olympiads or horse races with winners and losers. There are so many powerful cultural and socio-economic variables which might influence students' achievement that it is very difficult indeed to make sense of differences in outcomes except between jurisdictions which have the same kinds of makeup. Comparisons, including many questionable ones, will continue to made, and they should be interpreted with considerable care.

Students from British Columbia performed quite well in the mathematics study conducted by IEA at the Grade 8 and Grade 12 levels, or their equivalents in other jurisdictions. In the mathematics study, our Grade 8 students were in the top quartile and their overall performance was better than that of students in the other English-speaking jurisdictions taking part in the study: the United States, Scotland, England and Wales, New Zealand, and Ontario. Results at the senior secondary level are more difficult to compare because of enormous differences in retention rates. British Columbia retains many more students in the study of pre-university mathematics than almost any other jurisdiction[27], and this means that the content of the mathematics courses offered cannot be as specialized or as advanced as it would be if it were directed at a smaller, more select group of students. For example, whereas in British Columbia about 30% of the Grade 12 age cohort takes Algebra 12, the analogous figure for the corresponding course in most other countries is at most 15%. In spite of this kind of intake difference, results show that,

> *When international comparisons are made among the top 1% and the top 5% of students in each country on content which is appropriate to our curriculum ... our Algebra 12 students do as well as those in almost every other country.*[28]

3.D Conclusion

Our goal in this section of our report has been to describe the current structure of the curriculum in British Columbia schools, and to offer a number of comments on that structure. Those comments on the strengths and weaknesses of the current structure come from the literature in the field of education, from the briefs, from our conversations with teachers and students, and from our own experience as educators at several levels of the system.

The description we have presented is fairly lengthy in terms of a report such as this, but it seems to us that we have barely scratched the surface. The educational system is complex and variegated, and not amenable to brief description. To understand the system and how it works requires a great deal of time and investigation. However, if the changes we are about to propose are to be meaningful then it is absolutely necessary to understand the current system and see where improvements might be made.

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1 British Columbia, Ministry of Education, Curriculum Development Branch, *Curriculum Planning*, 1979.

2 British Columbia, Ministry of Education, Curriculum Development Branch, *Curriculum Goals: Source and Rationale*, 1988.

3 NAEYC, "Integrated Components of Appropriate and Inappropriate Practice in the Primary Grades," *Young Children* 43(January 1988): 70.

4 British Columbia, Ministry of Education, Field Operations Branch, *Administrative Handbook*, 1988.

5 Jane L. David, "The Use of Indicators by School Districts: Aid or Threat to Improvement?" *Phi Delta Kappan* 69(March 1988): 499-502. Margaret C. Wang and Herbert J. Walberg, *Adapting Instruction to Individual Differences* (California: McCutchan Publishing, 1985).

6 In calculating these percents of time allocated to various subjects, we have excluded the 75 minutes of recess time. Thus the base for these calculations was 1425 minutes.

7 Timothy V. Rasinksi & Diane E. DeFord, "Conceptions of Literacy: A Matter of Schooling," *Theory into Practice* 27(Winter 1988): 53-61.

8 Schools are authorized to depart from this standard to a limited degree.

9 It is somewhat unusual to find ESL programmes and programmes for Native Indians included under the Special Education umbrella, but this is the way such programmes are currently categorized by the Ministry of Education. Programmes for the gifted, on the other hand, usually are included as part of Special Education.

10 The Act is now called The School Support (Independent) Act.

11 Approximately 6% of the provincial public school enrolment.

12 James T. Fey, "Mathematics Teaching Today: Perspectives From Three National Surveys," Curriculum Models in Mathematics (January 1982): 490-503.

David F. Robitaille, "Intention, Implementation, Realization: Case Studies of the Impact of Curriculum Reform," in H.G. Steiner, ed., *Comparative Studies of Mathematics Curricula Change and Stability* 1960-1980, (1980).

13 In fact, in some schools the number of hours of class time in semestered courses is greater than that in non-semestered schools.

14 David Bateson, Science Achievement in Semestered and All Year Courses (Unpublished paper).
Dennis Raphael, M.W. Wahlstrom and L.D. McLean, "Debunking the Semestering Myth," *Canadian Journal of Education* 11 (Winter 1986): 36-52.

15 We are not discussing either grouping within classes or tracking here. The former practice is very common in elementary schools and is related to the practice known as cooperative learning. Tracking systems partition students into completely distinct programmes.

16 Adam Gamoran and Mark Berends, "The effects of stratification in secondary schools: Synthesis of survey and ethnographic research." *Review of Educational Research*, 57 (1987), 4, 415-436.
Jeannie Oakes, *Keeping Track: How Schools Structure Inequality* (New Haven: Yale University Press, 1985).

17 Each examination is set by a committee consisting almost exclusively of Grade 12 teachers of that subject. Committees to grade the students' examination papers are constituted in the same way.

18 E.R.I.B.C. has been re-organized and the scope of its activities somewhat curtailed. It is currently housed in the Faculty of Education at the University of British Columbia and has been re-named the Educational Measurement and Research Group.

19 Funded independent schools are required to participate in the programme but their results are not included in the provincial reports.

20 David F. Robitaille and T.J. O'Shea, eds., The 1985 British Columbia Mathematics Assessment: General Report (Victoria: Student Assessment Branch, Ministry of Education, 1985).

21 Sharon Jeroski, Catherine Tolsma, and George Labercane, *The 1984 B.C. Reading Assessment Summary Report* (Victoria: Ministry of Education, 1984).

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24 David J. Bateson, Chairman, *The 1986 B.C. Science Assessment: General Report* (Victoria: Student Assessment Branch, Ministry of Education, 1986).

25 David F. Robitaille and Robert Garden, eds., *Second International Mathematics Study*, Vol. 2 *Contexts and Outcomes of School Mathematics* (Oxford, U.K.: Pergamon, in press).

26 International Association for the Evaluation of Educational Achievement, *Science Achievement in Seventeen Countries: A Preliminary Report* (Oxford, U.K.: Pergamon, 1988).

27 Hungary is a notable exception to this general rule.

28 David F. Robitaille, *An Analysis of Selected Achievement Data: Mathematics 8 and 12* (Victoria: Student Assessment Branch, Ministry of Education, 1985).

4. The Recommended Curriculum

The last time a Royal Commission reported on the state of the educational system in British Columbia was in 1960.[1] Our society has changed a great deal since that time, and so has the role of the school as part of the community. Many of the functions and responsibilities which were once considered to be the exclusive province of parents or the church have been either turned over to the schools or taken over by them by default. They range from driver education to child-abuse education to family-life education. Many children arrive at school hungry, unwell, unhappy, or abused; and the school deals with them as we would expect a community of caring adults to do.

Teachers and principals are not social workers or health-care workers. Their professional preparation contains little that would help them cope with these kinds of problems. Moreover, there is simply not enough time in a day to deal with all of the problems children bring to school and to meet their educational needs and aspirations as well. The dilemma is that children will not learn as well as they might unless and until their more fundamental and more urgent needs are addressed.

4.A School as the Locus for Community and Educational Services

The school is frequently the first social agency which many children encounter, and it is sometimes the only one in which they and their parents have confidence. It is uniquely situated in the community to provide the locus for all kinds of social services. Several briefs referred to the need for greater access to social services. The writer of one brief referred to the role of the school "as a broker for multiple services."

We believe that the neighbourhood school should serve as the place where the delivery of social services for children[2] is coordinated. Different schools will have different needs for services and staff, and these should be determined through consultation with the community. Appropriate configurations of services to meet the needs of the particular community would be decided by the parents and professionals in the community.

Education would become one of many services provided in the school setting. Others might include day care, preschool programmes, adult classes, employment counselling, youth counselling, family counselling, as well as social and health services. Personnel could include social workers, child care workers, medical personnel, police, parents, and volunteers from the community. Teachers would be free to educate as they are trained to do. They would be able to call upon the assistance and resources of the community to deal with the many burdens they are now shouldering alone in some cases. School would be a place where children could have consistent access to caring adults in their professional roles, as mentors, and as friends. Parents could become active participants and could both give and seek advice about their children.

In its brief, the B.C. Council for the Family made a similar recommendation: that schools become "part of a larger support network for families involving the Ministries of Education, Health, and Social Services and Housing." In a similar vein, the author of one brief urges "the Commission to demand more health and social services in the public schools at the expense of other than the local education authorities."

In order to have the kinds of schools we are describing, there would have to be greater coordination of services at the provincial level; however, we do not believe it would require significantly greater financial resources to achieve our goal. What is needed is a re-allocation of those resources presently divided among the Ministry of Education, the Ministry of Advanced Education and Job Training, the Ministry of the Attorney General, the Ministry of Health, and the Ministry of Social Services. We believe that adoption of this kind of model, based on the traditional educational function of schools, but acknowledging that other services may be provided and coordinated there, might serve a preventive function and lessen the need for the kind of crisis intervention that is characteristic of the current situation.

We suggest that the Lieutenant-Governor in Council establish an inter-ministerial task force with a mandate to develop a detailed plan for re-allocating funds and functions from the ministries involved so that social services relating to children and families can be coordinated through local schools.

Benefits, both to the school and the community, could result from the adoption of this model, which we hesitate to call the community school model because of the negative connotation that name has in some circles. Not only would the schools benefit from access to additional resources in the community, but support for the school from the community would increase as more people become involved with the school. Conversely, the community would benefit from increased access to the resources of the school as well. We believe that the adoption of this type of multiservice co-ordinated model would help improve the quality of school and community life, prevent a number of problems which now require expensive remedial action, and thus make more effective and efficient use of scarce resources.

4.B Pre-school and Kindergarten

Our basic premise is that every child must be given the best possible chance to be successful in school. The opportunities young children have in their pre-school years to develop socially, physically, emotionally, and intellectually play a fundamentally important role in determining the likelihood that those children will have positive and rewarding educational experiences. For some, a stimulating home environment with caring parents provides what is needed to facilitate healthy development. For others, for whom the same type of home environment is not available or not sufficient, high quality early childhood education programmes are of crucial importance.

Research in the areas of cognitive psychology and child development in recent years have brought to light the importance of the pre-school years. Exposure to a stimulating language- and experience-rich environment, planned and supervised by a specialist in early childhood education and other caring adults, can make a significant difference in a child's readiness for formal schooling and contribute to a positive, successful start in school.[3] As the brief from the Revelstoke Pre-School Teachers puts it: "What is learned, or not learned, during these years [0-5] can have a profound effect in determining whether or not a child succeeds in school."

We believe that pre-school education should be available to all children in British Columbia, and school districts should be provided with funds to put such programmes in place. Several other provinces have begun to move in this direction, and are ahead of us in this regard. This is a sound investment in the future, as there is a strong correlation among a rich early childhood education experience, success in school, and subsequent economic productivity.

There are already many fine, privately operated pre-schools in the province and they should be encouraged to continue. They should also be eligible to receive public funding at the same level as that provided to Independent Schools and with the same controls.

We suggest that the Ministry of Education provide new funding to school districts to enable them, or other community agencies, to set up early childhood education programmes.

For many parents and children, the best place for the pre-school to be located will be in the neighbourhood school, and this is in line with the "Hub Model" recommended by this Commission's Working Group on Early Childhood Education.[4] Among other things, such an arrangement should result in a greater involvement by parents in the activities of the school, beginning at the pre-school level but moving up through the grades with their children. Moreover, if the neighbourhood school is to become, as we have suggested, a centre for social services in the community, it makes sense for pre-school facilities to be located there as well.

If the pre-school and Kindergarten experience is to be fruitful, we must ensure that the programmes implemented are appropriate to the developmental levels of the children. School districts should make available a range of different settings designed to accommodate children at differing levels of development. For example some schools might offer a full-day Kindergarten programme to meet the needs of children who need the extra time, perhaps for language-develop-

ment reasons. Others might have a pre-school or kindergarten programme available in a language other than English for children whose mother tongue is not English.

The overall goal should be to provide a healthy pre-school experience to all children whose parents choose to have them involved, and districts should have the flexibility they need to put in place programmes suited to local needs. Additional funding would be required and it should be tied to a set of standards established and overseen by specialists in early childhood education.

At the present time, admissibility to Kindergarten is determined by chronological age. School districts must provide a Kindergarten programme for all children who turn five in that calendar year, and all children enter the same programme regardless of their date of birth within that year. Given the emphasis that early childhood specialists place on the developmental needs of children and the importance of adjusting programmes to suit those needs, the use of such an arbitrary criterion seems unwise. Once started into the traditional system of consecutive grades, the expectation is that every year will mean another grade. Anything less is considered a failure.

> *We suggest that the Ministry of Education prepare a set of developmental criteria for school districts to use in selecting educational placements for young children up to the age of seven, and that a variety of different organizational settings for pre-school, Kindergarten, and Grade 1 be available.*

The problem is not that all five-year olds must be admitted. The problem is that they are all admitted to the same Kindergarten programme. What we are suggesting instead is that each child be assessed and directed to the programme best suited to his or her level of development. As the National Association for the Education of Young Children state: "Children of legal entry age should be provided with developmentally appropriate placement."[5] In a similar vein, the Kamloops Child Development brief recommends that, "a statement be embodied in Ministry of Education policy so that all children in British Columbia could experience developmentally appropriate education in the primary grades."

4.C Grades 1 to 10

In Part 3 we drew attention to the fragmented nature of the Intended Curriculum, to situations which sometimes result in a less than coherent programme from Grades 1 through 12, and to a curriculum ill-suited to the physical, social, and emotional needs of many adolescents. This is a system-level problem, but the solution is to be found at the level of individuals in schools. We could urge that the present structure of primary, intermediate, junior secondary, and senior secondary be unbundled and re-packaged, thereby necessitating the relocation of grades in different buildings. Such a rearrangement would not be sufficient to effect the kind of change we have in mind, but neither is it necessary. What is required is a change of attitude and approach by those who work in the system, and a readiness to try a different approach because of the benefits that might accrue to the students.

We believe that the current organization of Grades 1 through 10 should be altered, and that the new organization should have the following characteristics:

- Common Curriculum
- Heterogeneous grouping
- Integration of the curriculum
- Inter-disciplinary approach
- Cross-grade grouping
- Local content
- Official recognition

4.C.1 Common Curriculum

Many of the briefs and a good deal of current literature refer to the need for all members of society to share a set of common understandings, and for all children to be introduced to these as a required part of their schooling. If our children are to participate fully and equally in this democratic society, they need a common, shared foundation of knowledge, beliefs, and standards of conduct. Our society is extremely diverse and we are all enriched by its multicultural character. However, if that society is to thrive and grow, then all of its members must have the same opportunity to participate in the acquisition of a basic liberal education. This we see as the fundamental objective of the curriculum up to and including Grade 10, and it is for that reason we suggest the adoption of a Common Curriculum.

We suggest that the Ministry of Education develop a Common Curriculum for implementation in all schools for all students in Grades 1 to 10.

As is shown in Figure 4 below, the Common Curriculum is to be structured around three major categories of subject-matter content which we have called the Humanities and Fine Arts, the Sciences, and the Practical Arts. The overarching goal of this Common Curriculum is to prepare students for the roles they will play in their adult lives. The Common Curriculum will focus on developing knowledge, abilities, and attitudes so that students can become knowledgeable, critical thinkers, positively disposed toward learning and with a sense of their own value as individuals in our society. This principle of a Common Curriculum for all students in Grades 1 through 10 will bring increased coherence, balance, and focus to our schools.

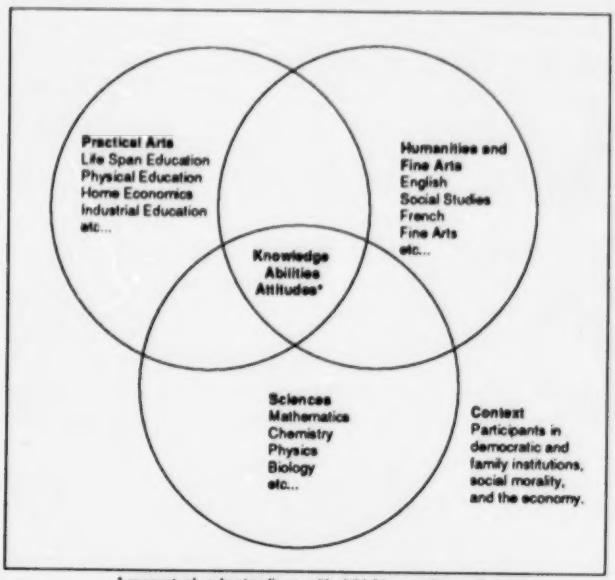

Figure 4. The Common Curriculum for Grades 1 to 10.

At the centre of our model of the Common Curriculum, where the three categories of subject-matter overlap, we have placed the knowledge, abilities, and attitudes which are to be the focus of the entire curriculum. It is toward the development of these attributes that the entire curriculum should be directed.

Our model juxtaposes content and process, and we want to lay to rest the controversy that rages about choosing content over process, or vice versa.[6] This is another in a long line of false dichotomies that come and go in education. It is patently foolish to talk about content without process, facts without thinking; and it is equally foolish to talk about

process without content, thinking without having something to think about. The curriculum needs both process and content objectives. We need to find the proper balance between them, the best compromise.

A curriculum cannot be thought of simply in terms of a list of facts and conclusions. As Ira Shore[7] has said,

> *Academic studies should not be bodies of knowledge consumed in great gulps by information-hungry students...The validity of every liberal arts course rests on how much critical thinking it generates, how much participation it mobilizes, and how it relates its body of knowledge to other disciplines and to the larger conditions of society.*

Critical thinking, an inquiring attitude, a disposition to accept innovation, and a sense of self-esteem can not be transmitted from teacher to students. Students must be actively engaged in the pursuit of these objectives, and the curriculum must be designed and implemented in such a way as to encourage both teachers and students to focus on the attainment of these objectives. Students should be provided with opportunities to explore and make sense of their cultural and intellectual heritage. As one submission puts it "an active, informed populace educated to think critically, and make decisions, distinguishes between tyranny and freedom and creates the balance so necessary for social equanimity and individual liberty."

Study of the Sciences, and the Humanities and Fine Arts, organized around the traditional disciplines of knowledge, should reflect a balance between the acquisition of factual knowledge and concepts, on the one hand, and the development of the modes of inquiry characteristic of the disciplines, on the other. Courses in these areas should be directed at helping students make sense of their world, by dealing with topics of interest to them and to society at large, while devoting less time and emphasis to an abstract development of the disciplines themselves. Practical Arts courses would likely draw upon concepts and modes of inquiry from the academic disciplines, but they should be centred around practical issues and activities that concern matters relating to students' lives.

In making decisions about what to include in the curriculum, we must consider the entire array of roles that students will be expected to play in society. We should be helping students prepare to assume their place as full participants in the democratic institutions of our society, as contributors to the level of social morality of our society, as economically productive citizens, and as caring and nurturing family members. The more that students see the relationships among the things they are learning, and between those things and their everyday lives, the more meaningful the curriculum will be to them.

The curriculum we are proposing would include much of what is to be found in current courses, but there would be a number of significant differences as well. For example, the mathematics curriculum would still include arithmetic, algebra, geometry, trigonometry, data analysis, and number theory, taught in an integrated fashion. However, no one of these would be identified as the sole or even the major focus of the curriculum in any given year. An in-depth treatment of algebra, of physics, of geography, or of literature, to name a few, could continue being the focus of some courses at the Grade 11 or 12 level.

The two most important differences between the curriculum we are recommending and the current one would be a consistent focus on the knowledge, abilities, and attitudes, and a great deal of integration across subject-matter lines. In order to make concrete the importance we wish to attach to the development of these traits, evaluation practices will have to be re-aligned. If critical thinking and problem solving are important, then we must include them among our criteria for success. We need to learn more about how to do a better job of evaluation in these areas than we presently do.

To provide an initial indication of what the Common Curriculum might entail, we have prepared capsule summaries for the subject areas identified in Figure 4. These summaries are, of necessity, sketchy and preliminary. Each will need to have considerably more detail added through the curriculum revision process. Furthermore, although the courses are described separately, we see them as being taught in a highly integrated fashion.

Humanities and Fine Arts

English. The study of English in the Common Curriculum can be characterized as "the ordering of personal and vicarious experience through language."[8] We see the principles embedded in the Whole-Language Approach and in the Writing Process, two instructional approaches employed in the current language arts curriculum in many elementary schools, as extremely important. Fundamental to each of these is a view of children as active participants in their learning.

English involves the development of language in its various modes: reading, writing, listening, and speaking. But it involves those processes in conjunction with some worthwhile content. We think that language development should be part of everything students do in school. Time devoted to the development of language should begin with students writing and speaking about their own experiences, reading and listening to each others' stories. They should be engaged in critical reflection about what they are reading, or writing, or listening to, or speaking about; they should be provided, as needed, with a teacher's guidance for developing skills. Students in the early years should be read good examples of children's literature. As they become more competent readers, they should be given more opportunities to read classical and popular stories, essays, poems, and information about other subjects they are studying.

Social Studies. The study of social studies in the Common Curriculum should focus on investigating patterns and relationships among peoples in society and in their physical, cultural, political, legal, and socio-economic environments. It should involve students in reading about and discussing past and current issues; in questioning past events, and predicting those of the future based on present information and evidence; and in relating what they are studying to their personal worlds. The social studies are, by definition, interdisciplinary, and they easily accommodate integration with studies in literature, languages, and fine arts. Students can be engaged in activities which involve them in drawing concepts from several disciplines which are directly related to their everyday lives. Social studies has the prime responsibility of "nurturing the knowledge and wisdom that will help students make personal and public policies, as part of a nation and members of the larger world community."[9]

French. The study of French as a second language in the Common Curriculum should emphasize meaningful language use and practice. Although at some point linguistic accuracy, developed in part through grammar instruction, may be important, the main reason for studying a second language is for purposeful language use.

Learning a second language has long been considered an important component of a well-rounded education and in Canada, where there are two official languages, it makes good sense to learn French. It also makes good sense to begin such a study early in a child's schooling, as research[10] indicates that very young students are more likely to acquire language naturally. Beginning the study of French in Grade 8, such as is presently the case in British Columbia, disadvantages those students who are less able. It can also result in the development of strong negative attitudes toward the learning of French by many students who view it as an unwanted and unnecessary imposition. Having French included as part of the Common Curriculum from the very outset will help such students appreciate the value of learning a second language.

We suggest that the study of French as a second language be a required component of the Common Curriculum, for Grades 1 to 10.

The teaching of French should be based on the same principles as first language learning. Students should be engaged in activities that are meaningful and purposeful to them. They should have opportunities to speak and listen as much as possible, to each other and to teachers who model appropriate accent and usage. Reading and writing in French should be introduced as students become more competent in and comfortable with oral communication. The study of French should entail a cultural component; the integration of French with social studies and fine arts is natural.

Fine Arts. The arts are an essential part of the Common Curriculum. Studying the arts involves the nurturing of abilities to perform, to create, to understand, and to appreciate music, art, dance, and theatre. Students should be given opportunities to perform themselves, and to see performances, both professional and amateur. They should be provided with time to consider how the arts represent other ways of expressing themselves through forms such as dance, drama, music, and art. Students should see that learning about the fine arts provides them with different ways of viewing their

world. Charles Brauner, a professor at the University of British Columbia, puts it this way, "Whether it is a Van Gogh night sky, a Serat street scene, a Picasso face, or a Henry Moore sculpted space, the primal perceptions provided by the visual arts open up new ways of seeing things."

All of the arts may be seen as vehicles for fostering creativity, and providing for alternative modes of thinking. All students, regardless of their individual talents, should be engaged in the study of fine arts through the Common Curriculum.

Sciences

Mathematics. The newly revised mathematics curriculum for Grades 1 to 8 retains a traditional emphasis on the development of the computational skills of arithmetic. However, that new curriculum also emphasizes the importance of understanding what the arithmetic operations mean and when they are to be employed, of estimating and judging the reasonableness of a solution, and of dealing with elementary notions of probability or uncertainty. To accomplish this, the curriculum includes topics from algebra and geometry as well as the traditional arithmetic.

The same sort of integrated approach with a strong orientation toward the applications of mathematics in a variety of settings, should predominate throughout the Common Curriculum. The need to introduce new mathematical concepts or techniques should grow out of the applications where they are to be employed rather than the reverse, which is the way mathematics has traditionally been taught. The use of calculators, except for simple computations, should become routine and all students should be provided with them just as they are with textbooks.

Formal courses in algebra, geometry, and the like, as pre-university mathematics, should be postponed until Grades 11 and 12. The elementary and junior secondary mathematics curricula should concentrate on those mathematical topics which will help students make sense of their world, and prepare them to use mathematics in their future lives and careers.

Science. Science in the Common Curriculum should be seen as "a body of developing ideas, a way of thinking and conducting inquiry, an outlook on the universe, and a complex social and cultural enterprise."[11] The study of science should involve students in scientific inquiry, drawing on the concepts inherent in the disciplines of biology, chemistry, and physics. It should present them with opportunities to engage in discussion about the relationships within the sciences themselves, and among the sciences, technology, and society. It should lead them to question scientific advances in light of consequences, real and anticipated. The thrust of the Science and Technology 11 course currently offered in British Columbia should be a part of every aspect of the science curriculum. As studies in science, mathematics and technology are so obviously related, all three should be integrated in activities wherever appropriate.

Practical Arts

Lifespan Education. Whereas all studies in the Common Curriculum should attempt to relate to students' experiences and everyday activities, studies in Lifespan Education have that as their primary objective. We believe that much of the current pressure to add new topics or courses to the curriculum can be alleviated by having a course which focuses on topics of concern to the lives of students. Lifespan Education would include, from the outset, studies in nutrition, personal health, family life, career awareness, citizenship, and accident prevention. As children grow, these topics could expand into more in-depth studies of fitness, mental health, community and environmental health, consumer awareness, prevention of sexual abuse, substance abuse, and AIDS. Students should be involved in activities and in personal decision making, based on accurate information and sound reasoning. They should be encouraged to engage in critical reflection and to develop self-awareness.

We suggest that a programme in Lifespan Education be a component of each year of the Common Curriculum

Career education is an important part of Lifespan Education, and the opinions we are expressing are similar to those expressed by the Career Education Society in their brief, "Learning a Living." Students need to learn about the value of work to employees and to employers, about inter-personal relationships, as well as about job-search skills and entry-level skill development.

Physical Education. Physical education is an important component of the Common Curriculum. We would recommend, as did the Advocates for Physical and Health Education, that physical education be a daily part of the Common Curriculum. We wish to emphasize, however, the difference between physical education and competitive athletics. The goals of physical education include fitness and wellness. Excellence in some aspect of sport is not the aim, and the teaching of physical education should be directed at all students. As we have said for the other areas of the Common Curriculum, specialization can wait.

Industrial Education.[12] The Common Curriculum should include an industrial education component at every grade level and for all students. In the early grades the focus might be on developing technological awareness, and familiarization with the use of tools, materials, and processes. It could draw upon and enrich other areas of the Common Curriculum. As they grew older, students might be provided with opportunities to explore different technological applications, and to engage in activities which would allow them to create, design, and construct.

Home Economics. The study of home economics in the Common Curriculum is closely associated with all the other areas of the Practical Arts, and it should draw upon the concepts and modes of inquiry inherent in the disciplines. The focus should be on the family and on preparing students for family living. The student should be engaged as an active learner, engaged in inquiry and reflection.

The Quesnel Chapter of the Teacher of Home Economics Specialist Association summarized the matter as follows:

> *Home economics has evolved from the domestic science advocated by Adelaide Hoodless, who in the late 1890s founded the Women's Institute of Canada and the first School of Home Economics. Formerly one could categorize home economics as "cooking and sewing;" today our students still learn about those topics but in a much wider context ranging from anorexia, diet-control, food additives, consumerism, textile-labelling to sexuality education and use of family resources.*

Stages of the Curriculum

While all ten years of the Common Curriculum should manifest the characteristics we listed earlier, organizational arrangements need not be the same way throughout those years. The educational system must respond to children in ways that are suitable to their levels of intellectual, social, emotional, and physical development, and this implies that those ways should change as children mature.

Having said that, we can find nothing to support the kind of abrupt changes that now take place between elementary and junior secondary school. We see no reason to change the personal and integrating arrangements generally set up in an elementary school, where students spend a good deal of their time with one or two teachers, to the highly organized and fragmented structure of a secondary school, where students may spend time with as many as eight different teachers during one school year. Other more flexible arrangements, such as those characteristic of many middle schools, have been shown to facilitate learning for students.[13] The curriculum should not be a series of hurdles that students are expected to clear; instead, it should facilitate their natural tendencies to learn.

If students are to be engaged in their learning, it is important that activities planned for them take into consideration their present levels of understanding and their current interests. We believe that children have a natural tendency to make sense of their experiences; and that, in order to do that, they draw from their own understandings. Such a view of learning has many implications for the curriculum and teaching.

We see the early years resembling what is presently occurring in the best primary classrooms. The experience of the curriculum during the first few years should be relatively unstructured and child-centred. Organization by subject and

the special vocabulary associated with each discipline should be introduced as an outgrowth of the child's guided experiences. Children should be given opportunities to explore and experiment. They should be provided with an environment where they feel free to try things out and not be worried about always being right. Self-esteem must be nurtured. The environment should be rich with materials: books, pictures, examples of student work, and many concrete materials to manipulate. Children's activities should resemble play and the curriculum should be integrated, with learning occurring through projects and learning centres. Children should have opportunities to talk and write about their activities and interests, to read what they have written, and to listen to each other, not just to the teacher.[14]

We visited a small primary school where these principles were being implemented. As is often the case in an exceptional school, the staff were dedicated, enthusiastic, sensitive, and intelligent. What particularly characterized the classes, though, was the emphasis on children, not on organization, or administration, or curriculum for their own sakes.

Children at this school talk at least as much as teachers do. They are encouraged to make decisions on their own and to accept responsibility for their learning. They are shown respect for their accomplishments. The school is decorated with children's work. Children read compositions that they and other students have written. They work in groups and help each other edit and illustrate stories. Teachers work with individuals, small groups, and sometimes the whole class, assisting and guiding them, and introducing skills to help them in their work.

The middle years may see a gradual introduction to a more structured version of curriculum organization, and the specialized vocabulary associated with each discipline. Activities should continue to draw upon and extend student experience, and teachers "must find vital points of *connection* between the personal world of the student and the larger world of vicarious experience."[15] This can be accomplished by engaging students in projects and activities which allow them to integrate their learning.

Children at this stage in their formal schooling will be more autonomous, both socially and intellectually, and they will benefit from working in groups and on self-directed activities. It is important that a supportive environment be established and that students feel a sense of identification with a caring adult in the school and with fellow students.

Some schools in British Columbia have been modeled to reflect the characteristics of middle schools, schools whose organization and philosophy are concerned with the important years of transition from childhood to adolescence. We were able to visit one. It was apparent that children's interests were at the heart of decisions made at the school. The timetable has flexibility so that special groupings and individualized instruction are facilitated. Students work on projects which integrate various aspects of the curriculum. Although they are being introduced to structured studies leading to understandings of the concepts and modes of inquiry of the disciplines, the studies are not cast in abstract or highly theoretical terms.

Students are provided with opportunities to work together in cross-age groups and given responsibility for their learning. Mutual respect is key. Teachers work together, with other resource people in the school, and with individual students to ensure that all students are acquiring the fundamental skills of learning. Students have many opportunities to engage in different activities: working with computers, working in the library, working in the shop and in the home economics rooms, exercising in the gymnasium, playing on the fields, and reading, writing, speaking, and listening, in small and large groups.

The final years of the Common Curriculum should resemble the model of an elementary school more than the model of the present junior secondary school. This is not to say that students should not be presented with more complex learning activities, more specialized views of the disciplines, and be expected to demonstrate more autonomy and independence in their work. It does mean that the "five by eight" timetables which are typical of junior secondary schools now would no longer be in evidence. A better arrangement would be an integrated curriculum which provides students with opportunities for diverse experiences to expand, consolidate, and add to their strengths. Students should have opportunities to meet with teachers who are subject-area specialists, but this may be done in a less structured way, through the use of interdisciplinary teams of teachers and more flexible timetables.

A member of the Royal Commission staff observed an excellent example of this kind of organization of the curriculum in action. The hallmark of the school is an integrated programme. Teachers work as a team, and while they all have a particular discipline specialty, they do not organize the curriculum around the discrete disciplines. Students, as in

earlier years, are engaged in activities that are intrinsically interesting. They work in cross-age groups and offer each other assistance as peer tutors.

Students are respected as unique individuals and are not expected to progress at the same rate or to the same degree of success. Large-group instruction is not the general case. Instead, small-group work, which frees up the teacher's time to work with individuals, is frequently employed. Students learn by doing, not by listening to an expert tell them how. The experts offer instruction and guidance as appropriate. The activities in which these students are encouraged to engage include complex research studies that cut across the disciplines, projects which often involve work with resource people in the community, outdoor activities including extended trips which challenge and build students' personal strengths, and the more traditional reading, writing, speaking and listening activities common to all studies.

The structure of the Common Curriculum and the kinds of instructional activities in which children and teachers engage do not change abruptly. They evolve as children develop and expand their knowledge and abilities. We see this structure of a Common Curriculum as being of such potential value, that we believe every child who is capable should continue attending school until he or she has successfully completed it.

4.C.2 Heterogeneous Grouping

In Part 3, we commented on the practice of streaming students into different classes on the basis of some measure of aptitude or ability, and noted that this practice has been generally shown not to be beneficial. On the other hand, the literature shows that all students benefit when they are grouped heterogeneously and when practices such as peer tutoring or cooperative learning are employed.[16] The benefits of cooperative learning have led a number of jurisdictions in North America to make the practice mandatory.

> *We suggest that the Ministry of Education put in place a programme of professional development for teachers on the topic of teaching practices in heterogeneous classes, and that the practice of streaming students into different courses or different levels of the same course cease.*

We believe that if teachers make greater use of cooperative learning and peer tutoring, they will have more time to deal with the problem of individual differences. We also believe that a more coherent curricular structure such as that we have described will help eliminate the need for the kind of disruptive, abruptly introduced modifications to the curriculum which make our present programme of studies unwieldy and overloaded.

4.C.3 Integration of the Curriculum

The present curriculum is fragmented and there is little evidence of conscious articulation between subjects, or between what students are studying and real-life situations. This situation is due, at least in part, to the fact that each subject is treated as a separate entity in the curriculum development process and this has undoubtedly contributed to the sense of "curriculum overload" which was mentioned in several briefs. Our proposed framework represents an attempt to integrate the curriculum by showing how all subject areas are built on the same set of abilities, and directed toward preparing students for their future roles. The Practical Arts component should provide an exceptionally congenial environment for this type of articulation since the subjects or courses in this domain are organized around practical issues and activities where it is natural to relate studies to contexts of everyday life. Concepts and modes of inquiry may be drawn from the various disciplines as well.

4.C.4 Inter-disciplinary Approach to Teaching

Teachers in elementary schools, and particularly at the lower grade levels, have traditionally used an inter-disciplinary approach in their teaching, where the boundaries between subjects are not clearly defined. For example, some math-

ematics may be taught during a science lesson; and, spelling and reading comprehension are integrated into most lessons. Although the elementary curriculum is based upon and built around the traditional disciplines of knowledge, teachers take advantage of occasions that arise to show the linkages among the disciplines. We believe that this teaching approach is to be encouraged, not only in the early years of schooling, but in all the years of the Common Curriculum.

We suggest that teachers be encouraged to use an inter-disciplinary approach in their teaching throughout the years of the Common Curriculum, and that the Ministry of Education facilitate this approach by producing curriculum documents which provide examples of interdisciplinary relationships among the areas.

One way to facilitate implementation of this suggestion would be for schools, particularly where there are young adolescents, to keep to a minimum the number of different teachers that students meet in any given year. We believe that teachers at this level should be expected to teach at least two different subjects to each class they meet. Another arrangement, which is employed in many middle schools and one which we would support, is to have an interdisciplinary teams of teachers assigned to a group of students.

Several groups of teacher-librarians made submissions to the Royal Commission in which they addressed the importance of their role. We entirely agree and think they have a very important contribution to make to the interdisciplinary approach recommended for the curriculum. Schools would be wise to include teacher-librarians on teams involved in interdisciplinary teaching and to make use of their knowledge in all curriculum planning. Of course, if this is to happen more systematically, librarians will have to be provided with good clerical support and libraries will need to be high on the priority list for upgrading of facilities.

The Grade 8 through 10 period of the Common Curriculum requires special attention. Students enter their teenage years at about the same time as they leave elementary school; and, for many of them, this is an extremely difficult period. We believe that the kind of organization for curriculum which we are proposing can help students and teachers not only survive this period, but profit from it.

We believe that students in their adolescent years would benefit from a strong sense of identification with their school community, and especially the adults in that community. To this end, we would encourage schools to adopt some form of homeroom organization.

We suggest that, in every year of the Common Curriculum, schools employ some form of homeroom system.

Homerooms could be organized by using intact classes, as is the case currently in elementary schools. In a secondary school, one of the teachers who teaches two or more subjects to a particular class could be designated as the homeroom teacher for that group. Alternatively, cross-grade homeroom groups including students from a variety of grade levels could be set up. In the latter case, if every adult in the school were involved, the size of students' groups could be made considerably smaller.

We believe that homerooms should be the place where students first seek information about courses, careers, and personal choices. The services of professional counsellors are not needed in most such cases, and this type of organization might provide counsellors with the time they need to work with more difficult cases in an in-depth manner.

4.C.5 Cross-Grade Organization

Traditional organization patterns for schools are founded on an assumption that 12 years are needed for a student to complete the elementary and secondary school programmes. That assumption glosses over the complications attributable to the incredible variability that exists among students in terms of motivation, ability, health, and a host of other variables that affect academic performance both directly and indirectly. Teachers know about individual differences on a first-hand basis; they deal with them every day, even in so-called homogeneously grouped classes.

Many schemes have been devised to attempt to cope with the problems resulting from the lack of congruence between the lockstep system of grades and the fact of human variability. Some, such as retaining students who fail in the same grade for a second year, have proved to be counter-productive. Students who repeat grades do not usually make the kind of progress that might be expected, and often develop negative attitudes toward schooling as a result of the experience.[17] Other schemes are so difficult to implement in a typical school setting that, although they appear to be reasonable methods for coping with the problem, they are never truly implemented.

In the 1960s there was a lot of interest in "continuous progress" programmes. Teachers were expected to keep highly detailed records on individual students, and these records followed the student from year to year and from teacher to teacher. The student's progress would be continuous because teachers were expected to design an instructional programme for each student on the basis of what that student had already mastered and what he or she was ready to do. This is an eminently sensible way to handle individual differences, but it is virtually impossible for teachers to implement when they have to deal with so many students.

As is so often the case, a compromise might be the most practical solution, and the compromise that we support is twofold. We would urge schools to experiment with a number of patterns of cross-grade organization of students and that, as part of that organization, it would be expected that some students would take longer to complete requirements than others. It should also be possible for other students to proceed through the programme more quickly.

We suggest that schools experiment with cross-grade organizational patterns in an attempt to provide for the individual talents, interests, and abilities of their students.

Some schools have small-scale programmes of the type we envision in place already. For example, we were told of a secondary school in Langley which utilizes cross-grade groupings of students for English. Students in these classes have typically failed one or more years of English and are in need of remedial assistance. Although each class includes students of widely different levels of ability and performance, all students are encouraged to engage in group discussions about topics of general interest, to write essays on these topics, and to keep journals. The progress of each student is evaluated on an individual basis.

4.C.6 Local Content

Many teachers and parents told us in the course of our visits to schools around the province that too much of the curriculum is prescribed by the Ministry of Education, and that too little time is available to teachers to concentrate on topics or issues of local interest. We believe that a significant part, about 20% of the total instructional time, should be available for districts and schools to use at their discretion. Some might choose to use the time for locally developed courses. Some might prefer to use the time for local projects involving the community and integrating several areas of study. A third option might be to devote some of this time to addressing students' individual needs. Or, the time might be used for an optional unit on a topic of local interest within a required course. The only restriction that would need to be made is that the option or options selected be consistent with the basic principles of the Common Curriculum.

We suggest that 20% of instructional time be available for discretionary use at the school-district level; time allocations prescribed by the Ministry of Education should be limited to no more than 80 % of the total time available.

Producing local units or complete courses of study is not a simple task, and each one will require a considerable amount of time, expertise, and expense. To assist in this process, we recommend that the Ministry include in each curriculum guide a number of sample, optional units which teachers could use as models in the development of their own units. Of course, teachers might choose to use one or more of the sample units as they were.

4.C.7 Official Recognition

Our hope for the Common Curriculum is that all students will develop the knowledge, skills, abilities, and attitudes which will enable them to participate fully as individuals and as citizens of this province and country, and which will instill in them an interest in lifelong learning. We see successful completion of this programme as evidence that a student has acquired the required fundamentals, and we believe this successful completion should be recognized in an official, tangible manner through the awarding of a certificate issued by the Ministry of Education.

We suggest that the Ministry of Education award a certificate to each student who has successfully completed the Common Curriculum for Grades 1- 10.

What we are proposing is not unique, though its purpose may differ from other similar schemes. For example, in the United Kingdom and many other countries whose educational systems are similar in structure to the British one, students are awarded the O-level certificate to indicate successful completion of compulsory schooling. In New Zealand 16-year-olds are awarded a School Leaving Certificate, and that credential is accepted by employers throughout the country as sufficient for many entry-level positions in a wide variety of white- and blue-collar occupations. A brief from a Chamber of Commerce recommended that, "There should be two school leaving certificates open to students — one at the completion of Grade 10 and another at the completion of Grade 12." The Common Curriculum certificate would not be intended to indicate that students had completed their formal education; but rather, that they had completed some common fundamental components of a liberal education.

Eligibility for the certificate should be determined by the school, using criteria and standards established by the Ministry of Education. Schools should be required to report to the Ministry each year on completion rates, and the evaluation measures employed. The Ministry should develop sample evaluation instruments which schools might use in their entirety, or which might serve as models for teachers to use in deriving their own measures. The criteria should not be limited to students' knowledge of facts and principles, but should also include assessments of critical-thinking and problem-solving abilities, and of students' competence in using those abilities in practical situations.

4.D Secondary School

After completion of the Common Curriculum, students should have access to a wide assortment of further educational opportunities, which they might choose to take advantage of immediately or at some future date. We refer to all of these post-Common Curriculum programmes as Secondary School.

The primary characteristic of the secondary school should be variety: a wide array of choices of alternatives for students. These should include all of the programmes currently available, from career preparation to university preparation, as well as increasing numbers of work experience and co-operative education programmes. Not all of these need be offered in every secondary school. In fact, we suggest that some of them not be offered in any secondary school, but that they be made available to interested students by other educational institutions, private as well as public, in the province.

The senior secondary school system as we know it needs to be re-organized to provide a better service to more students. Statistics from the Ministry of Education indicate that only about 60% of those students who enter Grade 11 successfully complete graduation requirements and are awarded diplomas at the end of Grade 12. Many others, two out of every five students entering Grade 11, either drop out some time within those two years, take a programme which does not lead to graduation, or fail. That is an intolerably high level of loss, and one which this society can ill afford to have continue. The secondary system should be such that the vast majority of students are able to satisfy completion requirements. Some of the features of that system which would, in our opinion, contribute significantly to an increase in that graduation rate are listed below and discussed in some detail in the sections that follow:

- Education Entitlement
- Completion Requirements

- General Programmes
- University Preparation Programmes
- Career Programmes

4.D.1 Education Entitlement

It should be the stated policy of the Ministry of Education that every child in British Columbia has the right to two years of publicly financed education beyond completion of the Common Curriculum. For most students the final two years would include Grades 11 and 12 and students would proceed through 12 years of schooling sequentially, without interruption, as they do now. On the other hand, adoption of such a principle would immediately open up a number of alternatives among which students would be able to choose.

> *We suggest that the Ministry of Education adopt an education-entitlement policy which stipulates that all students, upon completion of the Common Curriculum, are entitled to two additional years of publicly financed education which may be applied immediately, or in the future, to the institution of their choice.*

Adoption of this policy would make it possible for students, after successful completion of the Common Curriculum, to follow specific career-education programmes at private institutions or colleges, if they so wished. It would also make it possible for students, who had interrupted their formal schooling in order to work or travel, to return to the school system without penalty. (The background paper on lifelong learning prepared for the Royal Commission[18] takes this recommendation one step further, suggesting that "an educational credit of $2,000 should be established for each adult citizen in British Columbia without a high school graduation certificate.") The policy would have implications for many of the arrangements presently found in secondary schools, as well as for the other institutions which may find students wishing to enroll.

One possible implication would be that more adults would want to re-enter secondary school. It is quite unusual presently to find adults in full-time attendance at secondary schools in British Columbia. In fact, some schools have adopted operating policies which discourage anyone 19 years of age or more from attempting to come back to school to participate in the regular programme. Instead, such students are typically advised to choose between continuing education programmes offered by school districts and community colleges, and secondary school equivalency programmes such as the GED.

We believe that school districts should institute a policy of encouraging adults who wish to complete secondary school graduation requirements to do so in any one of several ways, but including attending classes during the day with those students following the regular programme. This is in keeping with our support for lifelong learning.

> *We suggest that school districts institute programmes to encourage adults who wish to complete secondary school to consider doing so re-entering the school system on either a part-time or a full-time basis.*

There is likely to be some immediate, negative reaction to the adoption of such a recommendation because of entrenched attitudes toward the nature of schooling at the senior secondary level. Most adults are accustomed to enjoying a fair amount of autonomy and discretion over their personal actions and choices, and they would probably not find the prospect of being a student in a secondary school very appealing. This attitude has little to do with the nature of the programme offered at the secondary school or with the expertise of the professional staff of the schools. It has rather to do with a view of school, even the senior secondary school, as a place attended by children and operated in a highly paternalistic way.

For a re-entry programme, or other more flexible arrangements to be successful, attitudes within the school will have to change rather dramatically, and the rights of individuals to make choices and decisions autonomously will have to be respected. This attitude is one all secondary schools should adopt for all students. We believe that a programme encouraging re-entry of adults who have not completed secondary school will have important benefits, not only for those

who participate in the programme, but for the educational system as a whole by making secondary schools places where students of all ages can pursue their interest in lifelong learning.

If re-entry programmes for adults were to be adopted in the secondary schools, some measures would have to be considered to lessen the possibility of duplication within the system. For example, if the community colleges were to assume a larger share of the responsibility for career-education programmes, they might be expected to bear correspondingly less responsibility for secondary school completion programmes. These might then become the exclusive responsibility of school districts, to be provided both as part of their continuing education and their regular programmes.

Evening classes and other alternative arrangements will be needed on a wider basis than is presently the case, for those who are unable to attend school on a regular basis during the day. We note that some secondary schools have already implemented extended-day timetables which provide more flexible arrangements for all students and we would encourage that more consider doing so. In some cases offering certain courses on a semestered basis would be an appropriate response to the flexibility required to make available all the options recommended here.

4.D.2. Completion Requirements

If there is to be a wide variety of alternative programmes available for students, then there will also need to be a variety of ways of meeting requirements for graduation. It is important, however, that we maintain some common purpose, based on the contexts for which we are preparing students: responsible participation in family and democratic institutions, in the social morality, and in the economy. To that end, we suggest that graduation requirements include some common elements of citizenship preparation. These courses would most likely be offered by the secondary schools, and students who elected to take the major portion of their programmes at other institutions could return to the secondary school for the common requirements.

The common elements should maintain the balance we proposed in Figure 4. In addition to English, One course from each of three major areas: Humanities and Fine Arts, Sciences, and Practical Arts would be required. Students would be free to choose from many options within each of these major curriculum areas to complete their programmes. For example, the Sciences requirement might be met by a student in a career programme in forestry by successfully completing a course in silvaculture; by a student in the university preparation programme by successfully completing a physics course; and by a student in the general programme by successfully completing an environmental studies course. In all cases the choice would be the student's.

Similarly, in the Humanities and Fine Arts, a number of courses could be used to meet the requirements. These would include the traditional courses, but other interdisciplinary offerings as well: for example, Citizenship, Contemporary Issues, or Women's Studies. In the area of the Practical Arts, courses in physical education, industrial education, home economics, and lifespan educational should be available. In addition, work experience and community service could be included.

The four required programme elements, although they may be filled in a variety of ways, would constitute the fundamental graduation requirements. In addition, students would have to meet the requirements of the particular programme in which they enrolled, and those additional requirements would be set by the institution offering the programme. The basic structure of the secondary years, shown in relation to the common curriculum and preschool preparation is illustrated in Figure 5.

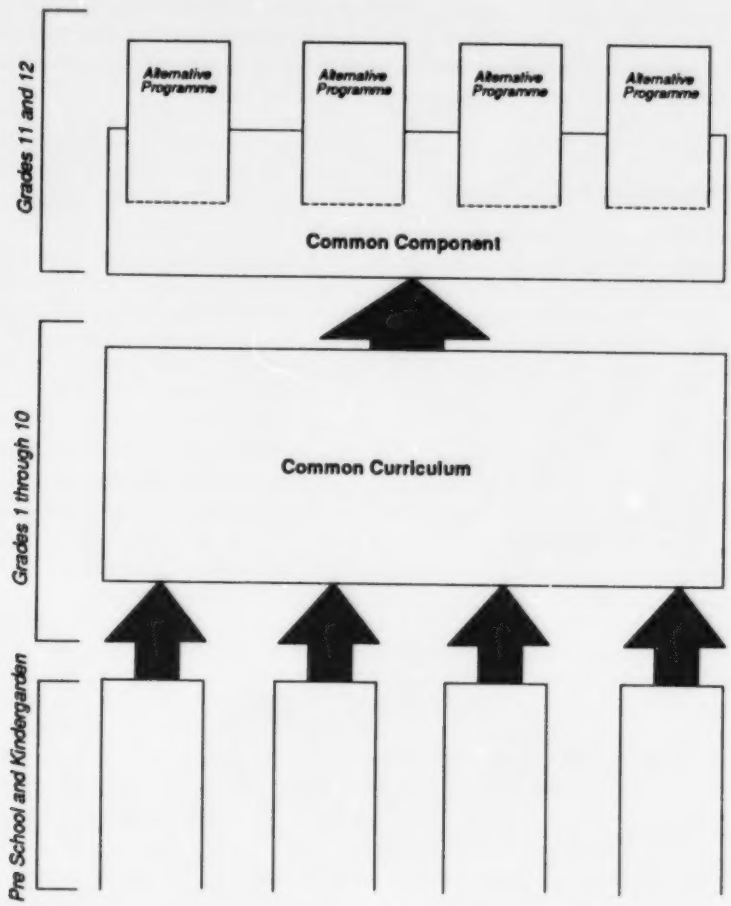

Figure 5. Structure of the Curriculum.

As is presently the case, successful completion would be determined by a combination of in-school evaluation and provincial examinations. Our suggestions in that regard are discussed in some detail later.

4.D.3 General Programmes

The vast majority of students and their parents will continue to prefer a programme of general education offered by the secondary school. Some students will not have decided what path they wish to follow, and it will be important to provide them with programmes that will enable them to preserve as many options as possible. Some will have decided to pursue education at a post-secondary institution and may find a general programme the best route for doing so. It is our hope, in fact, that the numbers of students planning to pursue post-secondary education will increase, because rates for participation in British Columbia are among the lowest in Canada.

The content of the general programme should resemble the one proposed for the Common Curriculum, and should be established on the same principles. We do not want to see a watered-down version of the university preparation

programme, but truly an alternative to it. Courses should be challenging. The emphasis should be on making connections between what is being studied and the world outside the classroom. The course called *Science and Technology*, which is currently offered in most schools, is a good example of the kind of course we envision for this programme. Courses should focus on contemporary issues, involve the students in questioning information and conclusions, and take students into the community and work places to gain practical experience.

4.D.4 University Preparation Programme

Many students will already have decided to pursue studies at the university level. Courses provided in the university preparation programme should be based on the traditional subject-matter disciplines, but the handling of that programme needs re-thinking. Successful implementation of the Common Curriculum in Grades 1 to 10 means that pedagogical practices will become characterized more as transactions between teachers and students rather than transmissions from teachers to students. The same kinds of teaching practices should be utilized in the university preparation programme.

The content of the university preparation programme should be influenced by the universities. However, we are concerned about what appears to be the arbitrary nature of certain entrance requirements and about the lack of consultation with secondary schools about those requirements.

For example, the *Science and Technology* 11 course which was recently developed by the Ministry of Education was not accepted by any of the provincial universities as satisfying their entrance requirement of a laboratory science course at the Grade 11 level. This is true in spite of the fact that the course has received rave reviews from educational jurisdictions throughout North America, and is considered to be a valuable way to study about science in modern society. Another example of such an anomaly is that fine arts courses are not accepted for entrance requirements. On the other hand, the University of British Columbia unilaterally decided that French 11 was to be required for entrance.

> *We suggest that a committee, including representatives of both the secondary school system and of the post-secondary sector, be set up by the Ministry of Education to provide a forum in which matters of articulation between the secondary schools and the universities can be discussed and settled.*

The unwarranted influence of university entrance requirements on the general programmes offered in secondary schools should cease. The proper role of the universities vis-à-vis the school system must be to offer advice concerning the most appropriate content for preparing students to continue their academic careers, but not to dictate that content and not to take unilateral action which might adversely affect the programme of the secondary schools.

4.D.5 Career Programmes

Some students will have definite ambitions in a particular career area, and they should have the opportunity to study in that area. Many secondary schools in the province do presently offer a limited number of programmes which could be considered career preparation programmes, but they typically are much smaller than the general or academic programmes that constitute the major portion of offerings in most schools.

Unlike some other provinces, British Columbia does not have a network of what are usually called comprehensive secondary schools, each offering a wide array of academic, general education, and vocational education courses and programmes in an effort to meet the needs of all students. We are not suggesting that such a network be built in this province, as we feel that there are other, perhaps better, ways of achieving the same objective.

We do have colleges, vocational schools and institutes, and private training schools which offer the kinds of career programmes that many students are seeking. We note, for example, in a document produced by the Ministry of Advanced Education and Job Training[19], that there are 400 registered private training institutions; 10,000 apprenticeships in 75 trades; 15 public colleges; the Pacific Marine Training Institute; Emily Carr College of Art and Design; and the

Justice Institute. These institutions may be better placed to provide adequately equipped laboratories and workshops containing up-to-date equipment which are absolutely essential to the success of career programmes. The schools currently do not have access to the levels of funding necessary to do this, and it is unlikely that they will in the foreseeable future. In fact, given adoption of a plan such as the one we are recommending, there may be no need for them to do so.

We believe that, after students have successfully completed the Common Curriculum, they should be eligible for entry into career programmes offered at community colleges, vocational institutes, or authorized private vocational-training institutions in British Columbia. Students could select one of these alternatives when the local school did not offer the programme of their choice. They could take all or only some part of their two-year entitlement at that institution, and the institution would receive funding from the provincial government. Appropriate inter-ministerial arrangements would have to be put in place to finance this arrangement, since it would be inappropriate to expect the Ministry of Education and local school boards to bear all of these costs.

We suggest that students who have successfully completed the Common Curriculum be considered eligible for admission to career preparation and vocational educational programmes at community colleges and vocational training institutes. We further suggest that an appropriate funding mechanism be put in place for this system.

Many excellent career-preparation programmes are currently offered in some secondary schools. We believe that such programmes offer genuine alternatives to students who have made decisions about what careers they intend to pursue at least initially, and we believe they should continue to be offered. We especially like the work experience component of the programmes. Cooperative education and work experience add to the relevance of a student's studies and assist in the development of the capacities which are at the centre of our framework for the curriculum. We encourage schools to make use of current trends which foster involvement of the community, and to cultivate partnerships with industry and business. The Commission's Working Group on Business and Education[20] provides strong support for these statements and our recommendation.

We suggest that, wherever possible, schools enter into cooperative arrangements with business and industry to provide students in career preparation programmes with quality on-the-job experience.

It is important that arrangements of this kind, be accompanied by cautions that students be adequately supervised and that workplaces be monitored to ensure the experience students receive is of high quality. In no instance should a student take the place of a full-time employee. The British Columbia Federation of Labour and local District Labour Councils should be consulted and have representation on advisory committees which oversee such programmes.

4.E The Curriculum Development Process

The Curriculum Development Branch, along with the Modern Languages, Special Education, and Correspondence Branches, of the Ministry of Education should continue to assume major responsibility for developing curricula for the schools. The curricular framework we have introduced should be used to guide this process and to ensure a greater degree of consistency throughout the Common Curriculum. The Ministry should move away from the current policy of seconding teachers and other educators to work on specific projects and then having them return to their home districts. Permanent positions in the Ministry should be established instead.

We suggest that subject-area coordinators be appointed as permanent members of the staff of the Curriculum Development Branch of the Ministry of Education.

The practice of seconding teachers from the field to work on particular projects should continue only as needed to supplement the permanent staff. The role of the seconded teachers would be to bring to each project the perspective of recent classroom experience, and to provide the Ministry with an ongoing influx of new talent and ideas.

Committees struck to work on curriculum revision projects should continue to be composed of classroom teachers, augmented as needed by specialists. We suggest that each revision committee include as a member, a teacher-librarian who could bring an interdisciplinary perspective to the project. Committees should structure their tasks around the framework established for curriculum development by the Ministry of Education, and in line with the principles set out for the Common Curriculum.

Specific input for curriculum revisions should come from a variety of sources, including the Provincial Learning Assessment Programme. Since such Assessments are conducted regularly, the cycle for revision should be aligned with them. Major revisions need not be made every four years; in fact, it would be preferable to have minor revisions made more frequently. Whatever the extent of a revision, a commitment must be made to provide the resources needed for implementation, including the timely provision of materials and professional development. This will necessitate long-term planning.

We suggest that: the cycle of curriculum revision established by the Ministry of Education be aligned with the Provincial Learning Assessment Programme, that a firm budgetary commitment be made to ensure that funds are available for implementation of revised curricula, and that revisions take place more frequently than at present.

We would also urge the Curriculum Development Branch to establish standing advisory committees in the major subject-area categories: Humanities and Fine Arts, Sciences, and Practical Arts. These committees would have a role to play in the ongoing monitoring of curricula and could provide overall coordination of the provincial curriculum. If they are to play a role as advisors, committees should have a membership representing a number of stakeholder groups, including educators from post-secondary institutions, the school and district levels of the public and independent systems, members from the business and labour communities, as well as school trustees.

Curriculum guides produced by the Curriculum Development Branch should continue to provide specific information about the philosophy, content, and intents of the curriculum. However, they should also provide suggestions for increased flexibility and local adaptation. In order to assist local development and assessment, the curriculum guides should be explicit about the standards and criteria that are to be met. Guides should be provided for all the subject areas proposed for the Common Curriculum, for the courses required for completion of high school, for programmes offered at the Grade 11 and 12 levels, and for Kindergarten. In addition, the Curriculum Development Branch should continue to provide resource books to accompany curriculum guides.

A recent decision has been made by the Ministry of Education with regard to the purchasing of textbooks and other learning resources. The new policy allocates 70% of the funding for central purchasing, and gives 30% to school districts to make purchases at their discretion. We support this decision and see it as a good compromise. The province maintains the advantages of purchasing in large quantities thereby allowing both lower costs, and greater influence with publishing companies. At the same time, school districts have more flexibility to respond to local considerations.

We also think the Provincial Educational Media Centre should continue its work in reviewing, selecting, and purchasing licences for software and video tapes. If we are to move into the technological age, we will need every economic advantage at our disposal, and the services of PEMC have already been proven in this regard.

Our final point about learning resources refers to the Provincial Resource Centre which acts as a clearinghouse for locally developed courses and materials. We think the intent of the operation is extremely worthwhile. Furthermore, the need for its services will increase if our recommendations are to be implemented. The Ministry of Education should consider funding the operation to a level which would make it reach its potential as a valuable resource for all school districts.

4.F Curriculum Implementation

The curriculum developed at the central level should be designed to permit a substantial degree of flexibility for local implementation. This should allow teachers, schools, and school districts to meet more adequately the needs of their

local students. In terms of our criteria for quality, the curriculum should be relevant, provide for access by all students, respond to diversity, foster student achievement, and provide for accountability.

We know from the literature in the area and from practical experience that curriculum implementation is more successful when the teachers who will be responsible for teaching the curriculum are involved in the process of development. There obviously is no way that every teacher could be involved directly in the work of provincial revision committees, but there certainly are opportunities for other kinds of involvement. We would suggest, for instance, that the Curriculum Development Branch continue its practice of circulating drafts of a curriculum revision in order for teachers to provide input at various strategic stages of the project, and that teachers' opinions of curricular innovations be sought on an ongoing basis.

We would also suggest that, when a project is completed at the provincial level, there be time and resources allocated to districts and schools for local adaptation. If each school staff were to spend time determining how best to implement a new curriculum in their own circumstances, they would become more personally involved in ensuring the successful implementation of the revision. We visited a school where teachers had been recently involved in the development of a scope and sequence for the elementary science curriculum. While their interest in the children and all activities in the school was evident, each one made specific mention of "their" science curriculum.

4.G Evaluation and Assessment

Evaluation in education is typically conducted at several different levels. In the first place, and most importantly, we are interested in evaluating the progress of individual children and monitoring their growth. For other purposes, we might be interested in aggregating the performance levels of individuals to the class, school, school district, or provincial level. With aggregated scores we cannot discuss the performance of individual students, but they can be used as more general indicators of performance. To be effective we need good evaluation practices at all of these levels.

4.G.1 Evaluation of Individual Students

The task of assessing individual students' performance should remain primarily the responsibility of classroom teachers. They are in the best position to observe the entire range of attainments we desire our students to achieve. If teachers are to fulfil this responsibility adequately, they should be kept well-informed about the most efficacious means for evaluating those attainments, and particularly those which are difficult to evaluate through the use of paper-and-pencil tests.

Teachers should base their evaluations on as much evidence as possible, including participation by students in classroom discussions, project work, and one-on-one interviews, in addition to written exercises and test results. Schools should be encouraged to make use of checklists and interview forms to help guide their evaluations. Finally, evaluation should be continuous, and should be used for diagnostic purposes as well as for determining whether or not achievement goals have been attained.

The Ministry of Education should provide guidance regarding criteria and standards closely tied to curriculum guides for teachers to use in evaluating students' performance. The criteria should represent the important dimensions of whatever learning is aimed for, and the standards should describe levels of performance or growth on each of those criteria. If the aim were for students to learn to communicate effectively, for example, the criteria might concern the quality of the language used and the clarity of the ideas expressed. A set of standards for a criterion dealing with narrative communication might range from simple sentences lacking modifiers to complex sentences including modifiers and phrases. A great deal of work in this area has been done in Queensland, Australia, and we could profit from their experience.

The purpose of prividing such detailed descriptions of criteria and standards is to help teachers monitor the growth of each student in relation to provincially defined goals. Teachers themselves would have to develop additional descrip-

tors to monitor students' performance in locally defined priority areas. The precise level of attainment to be expected of a particular child at any given time would vary, depending on the child and the local situation. Growth would be expected of all students; but, as we have already suggested, children would take different amounts of time to progress through the Common Curriculum.

4.G.2 Evaluation at the School or System Level

There should be some consistent aspects of the curriculum in schools across the province, in both public and independent schools, and some information about what students have learned and are capable of is needed. To that end, we strongly support the continuation of the provincial accreditation programme for schools and of the Provincial Learning Assessment Programme. In the case of the latter, we do have a number of suggestions for change.

We referred earlier to the massive scale of most assessment projects conducted for the Learning Assessment Programme, and to the rather long period of time needed to complete each of these projects. Those problems could be alleviated by re-structuring the programme and giving it a more explicit, and narrower set of goals.

We suggest that the goals of the Provincial Learning Assessment Programme be reformulated to concentrate on the provision of data on students' performance (knowledge, abilities, and attitudes) in each of the basic subject areas on an annual basis.

We believe that the Learning Assessment Programme should concentrate its attention on a small set of basic subject areas and employ advanced sampling and testing techniques to obtain system-level data on students' performance in each of these areas every year. A well-constructed sample of about 1000 students at any grade level should be sufficiently large to provide highly accurate estimates of provincial performance levels.

This is not to say that the other kinds of information collected in previous Assessments has not been worth the time and money invested. We are in urgent need of good information about what teachers think about the curriculum, about the kinds of instructional practices they employ, about students' attitudes and opinions, and about their future plans. The difficulty is that, by adding all of these tasks to the basic system-level performance monitoring responsibility of the Learning Assessment Programme, it has become unwieldy and cumbersome.

It is a false economy to attempt to use the Learning Assessment Programme to address questions concerning, say, relationships between instructional practices or students' backgrounds and achievement. The Assessment instruments are blunt, useful for describing the performance of the system as a whole in a limited way, but not for addressing complex interactions among several variables.

We suggest that the Ministry of Education establish and provide suitable funding for an Educational Research Branch which would, in annual consultation with the provincial Faculties of Education, set priorities for educational research in the province and solicit proposals to carry out that research.

The brief submitted by the Faculty of Education of the University of British Columbia included a recommendation for the establishment of such a branch. They recommended that the Branch make annual allocation in each of these areas:

1. to individual school districts for targeted research and development. This would include, where necessary, funds for districts to consult with Ministry and university personnel.

2. to universities in two forms:
   a. a global grant (perhaps modelled on that awarded to OISE) to be administered by the university and employed to cover the costs of conducting and disseminating university-based research.
   b. individual grants to researchers.

3. to the Ministry for contract research, for funding project-oriented and programmatic research at all levels of the system, and for the preparation of summaries and reports for dissemination.

This sort of structure and plan of action would ensure good links between theory and practice at all levels of the system.

4.G.3 Provincial Examinations

We have suggested far-reaching changes to the structure and content of the secondary school. That being the case, it seems advisable to reconsider the role of Grade 12 examinations in the system.

One of the problems with the current system of examinations continues to be how to decide in which subject areas examinations are to be set. When the examinations were re-introduced only so-called academic subjects, those that could be used to satisfy university entrance requirements, were to be examinable. But now there is an examination for Communications 12, which does not have that status. On the other hand, there are several subjects which do meet that condition but are not examined because of low enrolments.

There is also some reason to question the extent to which the universities are able to use the examination results in making admission decisions. Typically, students with good academic records are given provisional admittance in the spring before they write the examinations because the results from the June administration of the examinations are not available until some time in July. The examination results are used only to confirm the decision.

Another problem with the Grade 12 examination programme is the number of examinations which must be set each year. There are three examinations periods—January, June, and August—and completely new examinations must be set in each subject for each sitting each year. This is a fairly expensive and time-consuming process, and there is some reason to doubt whether this is the best way to get the kind of information that would best serve the interests of all concerned.

Having said all of that, the fact is that a decision has been made that there are to be Grade 12 examinations, and that decision has widespread support in the community. It is also true that examinations of this kind are very much the rule in most jurisdictions outside North America, and there does not appear to be any significant pressure to change that situation.

We believe the Grade 12 examination programme should be revised to reflect more accurately the nature of the curriculum as we have tried to specify it in this report. In particular, the current practice of setting examinations in certain, rather arbitrarily selected subject areas and not in others should be discontinued. In its place we would recommend that four examinations be set for each sitting: one in English, one in Humanities and Fine Arts, one in Sciences, and one in Practical Arts.

> *We suggest that the current Grade 12 examination programme be replaced by one in which each student would write four examinations to meet graduation requirements: English, Humanities and Fine Arts, Sciences, and Practical Arts.*

These examinations are not intended to be tests of minimal competencies or tests of general knowledge. They are to be achievement tests designed and constructed to measure students' level of mastery of the common component of the secondary schooling. It will be a difficult task to produce the kind of examinations we are recommending, but it seems to us that the advantages to be derived from such an initiative are well worth it.

Students could write these examinations at any time during their programme; they need not wait until the end of the second year to do so. To obtain a student's final grade, the school mark should be given a weighting of 60%; and the examination score, a weighting of 40%.

4.H Conclusion

We are suggesting a far-reaching and fundamental restructuring of the curriculum in British Columbia — not in terms of administrative restructuring, but in what actually goes on in schools. We want the schools to become neighbourhood centres for education for children and adults, and we want them to serve as centres for the coordination of health and social services. We believe that public schools should be able to offer pre-school programmes, and that additional funding should be made available for this purpose. We believe that programmes at the Kindergarten and primary grade levels should focus on the children's capabilities as suggested by their level of development.

At the heart of our re-structured programme is the Common Curriculum. All of our children, regardless of socio-economic or cultural background, need to share the same set of learning experiences, to know the same things, to develop the same capacities, and to explore their similarities and differences. This is the goal of the Common Curriculum. It will be achieved through greater emphasis on critical inquiry, and more integration of the curriculum.

The secondary school should provide students an opportunity to choose an avenue which they wish to follow: perhaps for a few years, perhaps for life. Some will choose career preparation programmes; others will prefer to prepare for university entrance. Still others, perhaps the largest group, will still be undecided, and we must be careful not to close off career paths prematurely.

The role of the Ministry of Education in this is to assist, to guide, and to monitor. Curriculum development should remain a largely centralized procedure, with provision for input from the system. The Ministry should provide assistance with curriculum implementation, and set standards and criteria for evaluation.

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5. Quality of the Curriculum

The third dimension of our framework for the analysis of the curriculum offered in our schools is Quality.[1] In order to succeed in this modern, highly competitive world, our children will need the very best education we can provide and that, simply stated, is our goal. But how is the quality of our curriculum to be judged? Surprisingly enough, there is a fair degree of consensus regarding an appropriate set of criteria for assessing the quality of a curriculum. Our set includes these five:

- Relevance
- Equity of access
- Response to diversity
- Achievement
- Accountability

Our discussion of the quality of the curriculum is centred around current issues in educational practice in British Columbia. Each of the five criteria is discussed in the context of a number of issues related to that criterion which the system must address. In order to focus the discussion, we asked Professor Jerrold Coombs to provide us with his comments and ideas in each of these criteria. In the following sub-sections, our discussion of each criterion is preceded by Dr. Coombs' analysis. We begin with his introductory remarks:

> *The terms "relevance", "equity of access", "response to diversity", "achievement", and "accountability" all suggest considerations that are important in judging the worth of educational programmes and curricula. Although each suggests somewhat different concerns (and different standards of judgement) these concerns overlap in various ways. Perhaps the most basic is our concern with achievement, for the point of providing educational programmes is to foster worthwhile learning achievements. The importance we place on relevance makes manifest our concern that the learning achievements fostered by our educational programmes are genuinely valuable to the persons who acquire them. The notion of equity of access highlights our concern that our educational programmes distribute resources for acquiring learning achievements in an equitable manner. Focussing on diversity makes salient our commitment to devising education programmes that make it possible for persons with very different interests and talents to have the kinds of educational achievements that are most valuable to them. Our insistence on accountability is motivated by our concern to monitor our educational programmes to ensure that they foster the achievements they are meant to foster.*

5.A Relevance

Coombs writes as follows on the criterion of relevance as it applies to the curriculum:

> *Obviously a good educational program must have relevance. But we must be clear that when we ascribe relevance to a program, we are making a value judgement about the program, not describing some feature or characteristic of it. Moreover, relevance is a secondary value in that it can be ascribed only when we have decided what values the program should realize. A program never simply has or lacks relevance, it always has relevance for realizing some value for some person or group.*
>
> *Discussions of educational relevance suggest several different sorts of values that should be realized. One suggestion is that education should help students realize those educational goals they deem desirable. A second suggestion is that education should promote learning that is genuinely valuable for students to have whether or not students recognize its value. Finally there is the suggestion that education should promote learning which is valuable in solving such important social problems as the problems of pollution and the threat of nuclear destruction. Obviously, we would like our*

educational programmes to realize all of these kinds of value, but there is very little agreement among educators as to how this may be achieved. This, then is the core of most disputes concerning educational relevance.

Perhaps the most fundamental dispute is that between persons who see the study of systematic bodies of knowledge or disciplines as the best way to realize these values and those who see it as relatively useless for these purposes. Those who question the educational value of knowledge tend to fall into two camps. The first group makes a sharp distinction between acquiring knowledge and acquiring such things as thinking skills and problem solving abilities. They argue that the latter are much more valuable to students than the former. The second group regards the traditional academic disciplines as having little value because they do not deal with the sorts of problems students are likely to face in their lives.

The conclusions of the first group are based on inadequate conceptions of both knowledge and the nature of thinking competence. Having knowledge is, in their view, equivalent to having a set of factual beliefs. But ordinarily we do not credit persons with having knowledge unless they have relevant, adequate grounds for their beliefs. To have such grounds they must be able to follow the modes of reasoning and apply the canons of evidence that are relevant to establishing beliefs of the sort in question. To a certain extent, then, one cannot acquire genuine knowledge without acquiring some ability to think or reason in a disciplined way. Disaffection with the traditional subject areas may stem in part from a common method of instruction, in which little effort is made to connect the conclusions of a discipline to the kinds of evidence and modes of reasoning by which these conclusions were established.

The conception of thinking competence which sees it basically as a matter of exercising sets of "thinking skills" is equally inadequate. To a considerable extent becoming better at thinking is a matter of learning the modes of reasoning and standards of evidence which are part of our intellectual traditions. The various disciplines within these traditions arose from different sets of human concerns and purposes, and thus embody somewhat different modes of inquiry and standards of adequacy and accuracy in thinking. We are unlikely to be successful in improving thinking competence if we ignore these disciplinary based modes of thinking.

Those who denigrate the value of studying systematic bodies of knowledge because they do not deal with the actual problems of students seem to suppose that knowledge is useful only if it contributes to the solution of practical problems or to getting a job and doing it competently. But this is only one of the uses of knowledge. Another important use is that of transforming the way we see the world and enlarging and enriching the kinds of experiences we are capable of having. This is the sort of value which has traditionally been associated with having a liberal education.

When making judgements concerning the relevance of our educational programmes, neither the felt needs of students nor the demands of society should be overlooked, but the relative importance of both of these considerations needs to be weighed against the value of initiating students into our intellectual traditions in such a way as to provide them with both genuine knowledge and the resources for autonomous, critical thinking.

Coombs' comments go right to the heart of the importance of relevance as a criterion for judging the quality of the curriculum and, to a degree, of the school system as a whole. Certainly, the question of the relevance of the school experience is topical and one that is under active scrutiny in British Columbia and elsewhere.[2]

5.A.1 Drop Outs

The first of our issues under the Relevance criterion concerns the numbers of students who drop out of or fail to complete school. Some leave school when they are old enough to do so legally. Others stay in school longer, but leave before the end of Grade 12.

Accurate data on drop-out rates are difficult to obtain, and the Ministry of Education does not have a very precise picture of the actual situation. It is known that for every 100 students who begin Grade 9, between 35 and 40 fail to complete Grade 12 graduation requirements.

This 35 to 40% of students is not composed entirely of drop outs. Some students stay in school until the end of Grade 12 but are not awarded secondary school leaving diplomas because they did not fulfil all of the requirements. Some move to other provinces, or to independent schools. The majority of those who are included in that estimate of 35 to 40% are, however, true drop outs. They have left school early.

Statistics from other jurisdictions in Canada and the United States indicate that the true drop-out rate is in the neighbourhood of 30%. This is shockingly high, and represents an enormous waste of human resource potential, one which our economy can ill afford. A recently published report from Ontario[3] comes to the same conclusion and recommends that the government take immediate action to improve the situation.

Many students who drop out do so because they view the programmes they are enrolled in, and the curriculum in general, as irrelevant to their needs. We believe that adoption of our recommendations for a Common Curriculum through Grade 10, and for re-entry incentives for those who have dropped out temporarily, would improve this situation dramatically.

The structure of our Common Curriculum includes an emphasis on local options and community-based content. We have recommended that Ministry-developed curricula be less categorical, and that there be more time available for schools and teachers to use in ways that best suit the local situation. We have also recommended that schools experiment with cross-grade grouping and make more use of peer tutoring and the principles of cooperative learning, which have been shown to be highly effective. Each of these measures, if implemented, would help alleviate the drop-out problem.

There is a great deal of technology available which could help more students be more successful. Powerful yet inexpensive calculators permit students to concentrate on the important underlying principles and problem solving rather than on tedious, relatively unrewarding algorithmic calculations; and some jurisdictions are now providing calculators to every students to use as they see fit.[4] Computers have a multitude of educational applications and there is an ever-increasing array of software available. Although much of the current educational software leaves a good deal to be desired, and although too much of it emphasizes drill-and-practice applications, there has been steady improvement in the quality of the material available.

Computers and calculators are only two examples of the kinds of technological innovations that can be used in the schools. Others include television, video-disc technology, and satellite communication for distance education. The Ministry of Education's recently developed Science and Technology course utilizes video tapes. The Physics 12 course is now available in a format which includes video tapes and is suitable for use by correspondence students or students in small schools. Similar packages for courses in other disciplines are planned and will make more options available to students.

We also believe that fewer students will drop out if there are more real alternatives available to them in Grades 11 and 12. Our suggestion that students be permitted to enrol in specialized training programmes at community colleges or vocational institutes for semi-skilled and skilled occupations after completing Grade 10 will, if adopted, provide such an alternative for many students. So too will expansion of the number of programmes offered within the secondary school and all leading to high school graduation.

Fewer students will drop out of school if it is apparent to them that school is relevant, and that the adults in the school have a real interest in their lives. Teachers, and all the other professionals in the system, must be willing to enter into the lives of their students, as so many of them do every day. In particular, we believe that each student should have a mentor, an adult in the school with whom he or she can identify, and who takes a special interest in that student's welfare. The mentor will almost always be a member of the staff of the school; but, where circumstances warrant, there is no reason why that adult could not be another person based in the school, or a volunteer from the community working under the supervision of the staff.

We suggest that, at least in Grades 8 through 12, a mentoring system be put in place, with a ratio of students to adult not exceeding 15 to 1.

Earlier in this report, we suggested that secondary schools adopt a homeroom system, and this might be done in conjunction with the mentoring system we are describing here. Mentors should work for and in the interests of the students under their supervision. They should come to know each of their 12 to 15 students as individuals: their interests, their strengths, their weaknesses, and their problems. The mentor should be the first person to know that a student is having difficulty and may be contemplating dropping out of school, and they should intervene directly to try to improve the situation and prevent this from happening.

Students might be assigned to mentors, or they might choose them. For example, if one of the teachers, or the principal, or a volunteer had a special interest in photography, students who shared that interest might request to be included in that adult's small group. A school might decide to assign a group of highly gifted youngsters to a mentor whose task would be to find suitable challenges for them. Both of these examples involve grouping students of different ages together, and we would support such a scheme. However, we would not insist on it being done universally. Flexibility is important here, as it is almost everywhere.

5.A.2 Moral Education

One of the primary functions of the school is to introduce students to the principles, modes of conduct, and values of the society. Another is to nurture the growth of each student's moral autonomy. We have chosen the term "Moral Education" to describe this aspect of the role of the school, although we realize that this term has a variety of connotations.

The importance of the role of the school in moral development and education is evident from the number of briefs which make mention of it. This is clearly an area where the people believe the school has an important function. In many briefs Moral Education is discussed in a specific religious context. While this is one way in which a programme in moral education might be implemented, it is neither the only, nor the most appropriate, choice in a pluralistic society such as ours.

Moral education in the public schools must be based on principles of social justice, and we see it as an integral part of all curricular and extra-curricular activities. Students should discuss matters such as racism, honesty, and equity in a Canadian as well as a world context. As with other areas of the curriculum, the focus should be on critical thinking, and the school must be open to discussions of the justice of its own rules and procedures. Ian Wright and Carol LaBar, in a commissioned paper, state that, "Students must have opportunities to engage in reasoning about moral matters."[5]

We suggest that Moral Education be viewed as an integral part of all curricular and extra-curricular activities of the school, and that it be based on the principles of social justice and critical inquiry.

Research confirms common sense in this regard.[6] Children's ability to distinguish right from wrong and to exercise self-discipline in their behaviour is developed, not by directing them simply to follow a set of rules established by someone else, but by encouraging them to understand the principles behind the rules, so that they are empowered to account for their own actions or beliefs. This is not to say that moral autonomy means complete freedom to do as you choose. Principles of social justice are the final arbiter. As with other activities in which students are engaged, activities associated with helping to establish acceptable conduct in a school, or developing an understanding of rules in a classroom would become more sophisticated as students mature.

We visited one secondary school which dealt with moral education this way. We were told that there were not many rules, that they all were based on respect for self and for others, and that everyone had been given an opportunity to discuss and question the rules. The atmosphere created in the school by the mutual respect that was felt among staff and students was apparent from our first step through the doors. There was a good deal of fun and camaraderie evident in exchanges between teachers and students, among teachers, and among students, but none of the fun transgressed what anyone would consider the bounds of appropriate behaviour. Teachers politely asked students to assist, and students agreed as politely. We were told by teachers and students alike that discipline was virtually a non-issue. Students sometimes did violate the rules, but when they did, they were not simply punished. They were asked to account for

their behaviour. If the account did not satisfy the principles behind the rules, which the student knew and understood, sanctions were applied, up to and including expulsion from school where serious violations such as possession of drugs were involved. There were few serious violations.

We think that schools would do well to turn over to students more responsibility for their own actions, encourage them to discuss issues and come to their own conclusions, and require that they base their conclusions on principles and attitudes which we as citizens in a democracy value. This is the kind of moral education we would wholeheartedly support.

5.A.3 Technology and Education

Proponents of the increased use of technology in schools describe classrooms where students have full access to calculators, computers, mass storage devices, video-based collections of films and photographs, data bases, and sophisticated software. Teachers and students interact with one another, and through electronic mail with students and teachers from other countries, to bring the curriculum to life in ways that were inconceivable only ten years ago.

Most, perhaps all, of these things are occurring in schools in British Columbia, and we saw several of them in the schools we visited. We saw, for example, primary students in a French-immersion programme using computers and word-processing software to write stories in French. At North Saanich Middle School we visited their Classroom of the Future and saw teachers and students using powerful microcomputers and advanced software.

The reality in most schools is quite different, and there are at least three reasons for this. First, supplying the kind of up-to-date, powerful equipment that would be needed to do the job properly would be very expensive. Secondly, although there is a large body of educational software available, much of it is of highly questionable educational value. Thirdly, many teachers do not have sufficient familiarity with the benefits to be derived from increased use of technology or with the use of the equipment.

> *We suggest that the Curriculum Development Branch initiate a review of all curricula to make recommendations concerning appropriate applications of technology and the provision of professional development assistance for teachers in this area.*

Because equipment is expensive to acquire and maintain, and because computer equipment becomes obsolete so rapidly, provision of equipment is a major problem. In the face of this dilemma, a number of schools have organized their own fund-raising campaigns to raise money to buy equipment. This may be well and good in certain communities, but it puts others at a serious disadvantage. Students attending schools where that kind of money is not readily available have just as much need for, and would derive equal benefit from, exposure to technology as students from more affluent communities. It is unjust to allow this kind of inequity to continue, and appropriate mechanisms must be put in place to redress any such imbalances.

> *We suggest that the Ministry of Education implement the recommendations contained in the report of the Provincial Advisory Committee on Computers[1] on the subject of provision of equipment to schools.*

Although the PACC report addresses only the topic of computer equipment, its recommendations could serve as a framework for applications involving other technologies.

We would also encourage the Ministry of Education to investigate applications of technology for children with special needs, and particularly for children who are physically handicapped. Great strides have been made in this area and many types of computer-based equipment which make it easier for disabled people to communicate are now available.

Members of the Royal Commission staff were privileged to spend time with a young woman who, although handicapped by cerebral palsy, has made enormous progress since she began attending a regular school for the first time recently. Most of the credit for her progress stems from her determination to succeed, and from the efforts of her parents, aide,

and teachers. However, her computer has provided her with an enhanced ability to communicate with her classmates, teachers, and the rest of the world. This kind of application of technology holds great promise for the future.

5.A.4 Lifespan Education

As was pointed out in several briefs and presentations to the Royal Commission, British Columbia has been without a curriculum in health education. A new curriculum is in advanced stages of development and should be introduced into the schools next year. We believe that the programme we described earlier as Lifespan Education should include health education and that this course should form part of the Common Curriculum in Grades 1 through 10. Career awareness and use of leisure time are two examples of the kinds of topics such a curriculum should include, along with more obviously health-related topics such as proper nutrition, hygiene, fitness, and the dangers of substance abuse.

5.A.5 Industrial Education and Home Economics

These two subject areas are required components of the current Grade 8 curriculum, but they are electives in every other year of the secondary programme. We believe that they both include topics which are of interest and importance to all students, and they should be included in the Practical Arts component of the Common Curriculum at every grade level.

Enrolment in these areas in the secondary schools continues, in many cases, to be gender determined: boys take Industrial Education and girls take Home Economics. This is a fundamental error. We suggest that these course labels be changed, and that this material be reconceptualized in such a way as to make its benefits to both sexes more readily apparent.

> *We suggest that Industrial Education and Home Economics be considered part of the Practical Arts component of the Common Curriculum from Grade 1 to 10, and that wherever possible they be integrated with other components of the Common Curriculum.*

Industrial Education and Home Economics, unlike Business Education for example, have traditionally been viewed as a part of general education, rather than career preparation. What we are suggesting is in this spirit, and should make that goal easier to attain.

5.B Equity of Access

Discussions about accessibility sometimes confuse, or at least fail to differentiate between, equity and equality. One of the most crucial points Coombs makes in the following discussion of accessibility to educational resources is the need for the system to provide for inequality in certain instances in order to assure an equitable distribution of the educational resource.

> *Issues of equitable access are best viewed as issues of just distribution of educational resources. The following formulation of the principle of equitable access would seem more defensible than available alternatives:*
>
> *A just distribution of educational resources occurs when and only when no student either prefers the resources given to someone else, or has good reason to believe that the resources given to someone else are of greater value in promoting desirable educational achievements than those given to her.*
>
> *Our choice of criteria for operationalizing the principle of just distribution is constrained by the need to ensure that our educational programs are efficacious, i.e., that they fulfill the fundamental social purposes for which they are designed. Educational programs are designed to accomplish three very different sorts of purposes: 1) to prepare persons for*

democratic citizenship, 2) to develop the talents of persons so as to increase their ability to contribute productively to the economy and culture of our society, and 3) to give persons intrinsically worthwhile knowledge such as that implicit in the ideal of a liberal education.

This plurality of educational purposes causes some difficulty in settling issues regarding equal access, for what will provide equal access for one purpose may not provide it for another. With regard to the citizenship purpose, justice and efficacy both require that educational resources be distributed in such a way that all students attain at least the minimum educational achievements necessary for responsible democratic citizenship, even if this requires giving more material resources and instructional attention to some than to others. For the purpose of talent development, educational provisions, i.e., materials and instruction, should be distributed equally unless an unequal distribution would in the long run be beneficial to everyone including the student receiving the lesser provisions. With regard to the liberal education purpose, educational provisions should be distributed in such a way as to ensure that all students have resources of equal value in promoting self-development.

When differences in students result in their having differential ability to profit from the same kinds of educational provisions, justice requires that we make available to each student the kinds of provisions they are best able to profit from. Thus equitable access often means access to very different kinds of educational programmes. When differences in students do not affect their ability to profit from the same kinds of educational provisions, it is unjust to give some students provisions different in kind or quality from those given to other students. At the present time there is good reason to believe that many students are unjustifiably being denied equitable access to educational resources both because irrelevant differences in wealth and geographical location have been permitted to result in educational provisions of unequal value, and because relevant differences associated with socio-economic status, cultural background, and gender have been inadequately taken into account.

While it is important to equalize educational financing, this will not remove all of the inequities of educational access due to wealth and geographic location. To remove such inequities it may be necessary to provide students in lower socio-economic groups with compensatory educational programmes. It will also be necessary to ensure that resources offered through public educational institutions are equal in quality and quantity to any available from private sources. Removing inequities due to cultural differences will necessitate our providing resources of equal value for cultural groups pursuing educational goals somewhat different from those pursued by other groups. To remove inequities due to gender differences, on the other hand, it will be necessary to broaden the scope of educational goals so that they more adequately reflect values typically associated with females.

We have identified four major issues to be discussed under the criterion of equity of access. They are: gender equity, distance education and technology, multiculturalism, and Native Indian education.

5.B.1 Gender Equity

Issues of gender inequity, as reflected in the proportional representation of males and females in educational programmes and careers, have been the subject of many articles and reports both here and elsewhere. In the three Mathematics Assessments conducted since 1977[8] by the Ministry of Education, concern was raised each time about the under-representation of females in mathematics courses at the senior secondary level. Similar concerns were expressed in the 1986 Science Assessment.[9] This kind of under-representation means that many young women are making decisions early in their secondary school careers that are effectively cutting them off from many career paths and from many programmes at the post-secondary level.

Other less obvious examples of gender inequities are noted as well. Significant differences in teacher expectations and attention have been reported in the literature. For example, Barbara Houston[10] concludes as follows:

Studies in teacher-student interactions indicate that within coeducational classrooms, teachers, regardless of sex, interact more with boys, give boys more attention (both positive and negative), and that this pattern intensifies at the secondary and college levels.

Differential treatment in counselling, male-oriented curricula and extra-curricular activities, and a hierarchical system where few women are in high-level administrative positions are also all in evidence in our schools.

It is important to be clear about the fact that we are talking here about a problem which is sociological or cultural in character, and not one which has to do with innate talent or ability. A number of research studies have reported significant differences in ability in science and mathematics between males and females and, particularly at the secondary school level, in favour of the males; but, these kinds of findings have been contradicted by more recent reports. In North America and elsewhere, recent research indicates that there are only very slight differences between the sexes insofar as academic performance is concerned and that, as is usually the case with such comparisons, the within-group variance is much greater than the between-group differences. Grade 12 examination results in British Columbia indicate little difference in performance levels of female and male students.[11]

The Ministry of Education has made some attempts to respond to such inequities, mostly by encouraging access. For example, a policy exists that prevents denial of access to any subject on the basis of gender. Another policy provides guidelines to ensure that there is no sex stereotyping in curricular materials. Briefs, however, recommend that the Ministry take more positive steps toward gender equity by changing the content in all courses to make them more gender-sensitive and gender-balanced; and to change the requirements for school completion to include programmes which deal with the domestic, reproductive, and private world as well as the political, productive, and public world. As the writer of one brief advises

> *...in order for girls to succeed in traditionally 'male' areas, the school must include 'feminine' values of cooperative learning and connectedness, values which are important to the males as well as the females in our society.*

> *We suggest that gender equity guidelines be developed for all curriculum development committees, and that those guidelines reflect a gender-sensitive and gender-balanced orientation.*

We believe that our suggestions for the Common Curriculum do reflect a more gender-sensitive view of the curriculum. We acknowledge as important for all students the role they will play as caring and nurturing family members; and, we have included as part of the curriculum for all students courses in Lifespan Education, as well as in industrial education and home economics. We suggest pedagogical approaches such as cooperative learning groups and integration of content, both of which reflect more appropriately what are characteristically female traits, as opposed to a more competitive, productive model which reflects more masculine traits. In addition, we would like to see integration of content about women's lives and contributions to our cultural and intellectual heritage in all curricula.

5.B.2 Distance Education and Technology

The population distribution in British Columbia, like that in several other Canadian provinces, consists of a small number of large population centres and a large number of small, often isolated, communities. This situation makes it extremely difficult to offer the same kind of academic programme in all schools, and the result is that students have been denied access to programmes or courses of their choice because there were not enough students in the school to justify offering the course or programme, or because there was no teacher qualified to offer it.

The Ministry of Education has been sensitive to this problem, and has made some fine alternatives available. One which we have referred to previously is a correspondence version of the Physics 12 course, which many small or remote schools would otherwise find difficult to offer on a regular basis. The correspondence version includes both print material and video tapes as well as software for students to use, either with or without the direction of a teacher, and is an excellent example of the kind of programme that is needed to meet the challenge of our geography.

Print and video tapes are hardly examples of advanced technology these days, and we would encourage the Ministry of Education to devote new funds to identifying applications of truly advanced technology such as satellite communication, high-capacity computer storage devices, video discs, and the like. That having been done, teams of experts in curriculum development and the use of these technologies should be set up to develop alternative versions of programmes which many schools would otherwise be unable to offer.

5.B.3 Multiculturalism

Programmes in support of multiculturalism are one of the significant trends of this decade, even though the term "multiculturalism" seems to be defined somewhat vaguely. In Canada, the term appears to connote a willingness to learn about other cultures; to understand that other cultures are not better or worse, wrong or right, but only different; and to accept everyone, regardless of origin or status, as people deserving of respect.

Multiculturalism can also mean adopting a global perspective with respect to the entire curriculum. It has become trite to describe the world as a global village, but that designation is highly appropriate in this era of instant communication, multinational corporations with world-wide interests, and global political alliances. Isolationism is a thing of the past. We are all inextricably linked to one another, and we need to understand one another in order to enhance mutual cooperation and development. This view of global education as the goal is the one we would espouse and recommend for adoption in the schools of British Columbia. As indicated by the writer of one brief,

> *The good news is that something else doesn't have to go to make room for "global education." From the many educators who have seen the great need and have devised ways to bring such instruction into their classrooms, school systems, or districts, we learn that it is possible to do it by teaching the same subjects with a different emphasis.*

The Ministry of Education has begun some curriculum projects which include studies of the Pacific Rim. This is a good beginning to what we see as a more global scope for our curriculum.

It is important to be clear about what we do not wish to encourage under the guise of multiculturalism. We should not support schools organized along ethnic or cultural lines, and we must ensure that local discretion in curricular matters is not directed in this way either. The view of multiculturalism that espouses preservation of cultures brought here through immigration, to the neglect of learning about Canadian culture, carries with it the danger of tribalization of our society, and this we do not wish to encourage.

We expect the schools to help prepare the next generation of Canadians to live in this society, albeit with a higher degree of world-consciousness than has been the case until now. We expect all students and all citizens to learn what it means to be Canadian and what is expected from each citizen of this country. From time to time, we will encounter instances of conflict between the values espoused by Canadian society and others. For example, some other cultures have different views on the proper place of women in society, and on the rights and responsibilities of citizens vis-à-vis government. In all such cases, the school must espouse principles of social justice.

Children newly arrived in Canada from other countries need short- to medium-term help to become integrated into the school system. Many of them need to enrol in ESL programmes where they can gain some facility with the language before joining regular classes. As the Vancouver Teachers of Students of English as a Second Language explained in their brief, many also need orientation programmes to familiarize them with the ways in which this society and its schools operate, and counselling to deal with traumas they may have suffered in their war-torn mother countries.

Making such programmes available and accessible to their parents as well would help establish good family-school relationships. Most school districts in the Lower Mainland have effective ESL programmes for students; but, because of limited resources, they are unable to offer them to parents. Many smaller school districts do not have extensive ESL programmes either because of a lack of resources or a perceived lack of need because of small numbers of ESL children needing such services. We see the need for such programmes, and for teachers with appropriate qualifications, continuing to increase in the future. We would encourage the Ministry of Education, local school districts, and the three Faculties of Education to take appropriate measures to meet this challenge.

Related to the problem of integration of newly arrived students into the system, is the question of heritage languages. Many briefs contained requests that heritage languages be taught in school. We believe it to be the responsibility of the community concerned to ensure that their children maintain this vital link to their heritage. Schools might be expected to make their facilities available for heritage-language classes outside regular school hours as part of their community orientation. However, we believe that the teaching of heritage languages in general is outside the proper mandate of the schools. An exception to this general rule could be made for Native Indian languages which, in some communities, would be a natural addition to the Common Curriculum.

We are not opposed to having students learn second and even third languages. On the contrary, we strongly endorse this principle, and in Part 4 of this report we suggested that French be included as part of the Common Curriculum from Grade 1 onwards. The point we are trying to make in this section applies only to heritage languages, and not to the learning of languages in general.

5.B.4 Native Indian Education

The educational system has been notably unsuccessful in meeting the needs of Native Indian children. Seventy-five percent of Native children attend public school[12], but only 20% complete graduation requirements. There are many problems, but two which are most often identified are that many Native Indians live in remote areas and access to public schooling is obstructed, and that the education offered in the public schools is not relevant to Native Indian children. We think that the Province has an obligation to make every effort to alleviate both problems.

We believe that the Common Curriculum we have proposed will go far to make education more relevant to all students. Our recommendations with regard to pre-school should help to make schooling a more relevant experience for Native children. We also believe that the notion of providing developmentally appropriate experiences in early education is more suitable for all children than the present arbitrary placement and advancement by age, and that Native children will benefit from such programmes as will other children.

Our suggestions to incorporate practices such as cooperative learning groups, and to integrate the content of the curriculum, are more in keeping with Native culture than the competitive, fragmented models which are currently in place. In fact some studies in Saskatchewan have shown greatly increased satisfaction and performance among Native children who have been taught in cooperative settings. Finally, we believe that the suggestions we made in the section dealing with Distance Education may be useful for Native Indian education in remote communities.

In keeping with our idea of the neighbourhood school, we see a need for closer liaison among teachers, administrators, parents, and the organizations which represent the concerns of Native Indians. Involvement of Native adults in the school, and of the school in the Native community, will be extremely important if schools are to gain the confidence of Native peoples and reflect more adequately their view of the world. The other services provided through the school will help educators to build the bridges, and will be there to provide the support.

All curricular materials authorized or prescribed for use in the schools of this province should include material dealing with the unique character of Native Indian society, and make clear the past and continuing contributions of Native Indians to Canadian society. This should be a feature of every subject in the curriculum, but especially in literature and social studies. Such a recommendation might have been subsumed under the more general proposal relative to global education which we discussed in the previous section on the subject of multiculturalism. However, the importance of familiarity with Native Indian culture for all Canadians requires particular emphasis and, for that reason, we decided to discuss it separately.[13] Many opportunities exist for joint efforts between school districts and Native Indians for curriculum design and development in this regard.

Many Native Indians want full control of the schools their children attend, and this has begun to happen. The Nishga School District covers a huge area in the north-central area of the province and has control of several elementary and one secondary school for Native Indian children. In a number of other parts of the province, band councils have assumed responsibility for their local school.

The system need not urge every band or tribal council to proceed in this way, but those who do decide to do so should receive the assistance they require and request, to the extent it is possible. There must however, be some restraints on this freedom of action. In particular, the Ministry of Education must monitor Native Indian schools in the same way that it monitors all others receiving public funding to ensure that the programmes offered in those schools conform to authorized guidelines.

5.C Response to Diversity

Diversity is one of the major characteristics of contemporary British Columbia. We are an almost incredibly diverse people living in a province which has great geographical diversity; and, although we may be reluctant to admit it, most of us have difficulty coming to terms with this lack of homogeneity gracefully and accepting it willingly. Coombs' remarks on the topic of diversity and the kind of response that is needed from the school system are extremely important.

> *Our school population exhibits considerable diversity with regard to cultural background, native language, physical, artistic and intellectual talents, personality traits, and enduring interests. A good educational program must take appropriate account of such diversity, both in the procedures it incorporates and in the selection of its goals.*
>
> *Educational procedures must take account of diversity in several ways. First, all students must be treated with equal respect and given equal access to educational resources appropriate for them (the discussion of diversity addresses this topic in depth). Secondly care must be taken to ensure that curricular materials do not damage the self-esteem or limit the aspirations of any students. Finally, procedures designed to compensate for differences among students must not be permitted to result in some students being denigrated or demeaned by others because of their differences.*
>
> *Among the most important differences to be accommodated in the selection of educational goals are differences in interests and talents. Given our commitment to autonomy and non-coercion, we must accept the general principle that, in addition to pursuing those goals which we have good reason to require everyone to pursue, students should be enabled, as far as possible, to pursue whatever educational interests their talents make possible. However, the two qualifications built into this principle must be taken seriously.*
>
> *The first qualification stipulates that the interests pursued must be significant educational interests. Our criteria for judging what is to count as a significant educational interest are fairly vague. An interest in learning chemistry, astronomy, musical composition, or painting is clearly a significant educational interest, whereas an interest in learning alchemy, astrology, break dancing, or basketball clearly is not. It appears that a significant educational interest must be an interest in learning something which qualifies as genuine knowledge or is part of an acknowledged discipline. Despite the vagueness of this criterion, it plays a significant role in determining the limits to our obligation to accommodate diversity. Thus, this is a matter to which public debates about education should give much more specific attention.*
>
> *The second qualification says that students should be enabled to pursue their interests insofar as possible. Satisfying a student's interest may, because of its uniqueness among the student population, require resources that are unacceptably costly. If, for example, only one student in a school district has an interest in learning to read ancient Greek, the cost of providing the resources to make this possible may be unacceptably high. What is to count as too costly is largely determined by the total resources available to the educational program, and by the need to distribute resources equitably. Thus in this context "too costly" means costing more than could be spent without being morally irresponsible. When the costly educational interest is the development of a rare talent having considerable social benefit, it is possible a case could be made for the moral acceptability of supplying the necessary resources. Should there be significant numbers of students whose interests are in this way too costly to accommodate, we must seriously consider whether or not our educational programmes as a whole are being given sufficient resources to cope with the diversity of the population they serve.*
>
> *Not only must we choose our educational goals so as to accommodate diversity, we must also include among our goals the fostering of respect for persons in all of their diversity, and appreciation of the value of diversity for enriching our lives.*
>
> *Our commitment to taking appropriate account of diversity is not a commitment to any particular means of doing this. Were we to institute a voucher system, increase choices among kinds of public schools or place students into different curricular streams in order to fulfill our commitment to diversity, we might find that we have violated our commitment to equity or to the promotion of a just, democratic community. Consequently, we need very careful study of the possible consequences of the various "freedom of choice" options currently under discussion.*

5.C.1 Special Education

The Special Education programme is intended to serve students with an extremely broad range of exceptionalities. These include gifted children, mentally or physically handicapped children, emotionally disturbed children, and learning disabled children. The Ministry of Education also includes programmes in English as a second language and programmes for Native Indians as part of the Special Education portfolio, and this seems to us to be very much of an anomaly. Few people would consider such programmes part of Special Education, and the Ministry should re-organize its operations to re-locate responsibility for those two. In this report we have used the term "Special Education" in the usual way as not including either ESL or Native Indian programmes.

Two of the most important recent trends in Special Education, in British Columbia and elsewhere, are "mainstreaming" and "IEPs." Mainstreaming means moving children out of special classes and schools and into regular classes with other children: in other words, into as close as possible to a normal school environment. IEPs, or Individual Educational Plans, are detailed educational prescriptions for special needs youngsters, designed to help each individual achieve his or her potential. Both of these trends are, in our view, highly appropriate and deserving of support and encouragement. Just as our whole society has seen the justice and the need to accommodate the needs of the physically handicapped in an urban environment, so too must the schools continue to recognize the need to accommodate special needs children and see the benefits to be derived for all. We were reminded in one brief that

> *Where disabilities are visible, we acknowledge the handicap. In recent years, through the efforts of people like the late Walter Dinsdale and his Federal Government study "Barriers" and Rick Hansen in his Man In Motion World Tour, Society has gone one step further. We have not only acknowledged the handicap but have also acknowledged that the limits to what these individuals can achieve are largely based on the limits we in society place upon them. We have seen that by focusing on ABILITY and removing barriers, disabled persons can reach for the stars and achieve greater if not full participation in society.*

The area of Special Education which has grown most dramatically in the recent past is that of dealing with children with specific learning disabilities. There is a good deal of confusion and disagreement in the literature about what constitutes a specific learning disability and how widespread their incidence is. In spite of this lack of precision, a great deal of research has been conducted on techniques for identification of children with learning disabilities and on development of intervention strategies. For example, it is fairly well established that the earlier a learning disability is identified and remedial measures taken, the likelier it is that the child will be able to cope successfully with the demands imposed by the curriculum.

Some of our earlier suggestions addressed problems of special education. Our suggestion for expanded availability of pre-school, for example, may allow for earlier identification of problems. The idea of social services being coordinated through the local school may result in more speedy referrals and subsequent remedial measures being taken. The extra time provided for local discretion may make it possible to provide special attention and programmes for children with special needs.

There must, however, be limits; there are expectations that cannot be fulfilled. We heard a father at one of the hearings in the Lower Mainland speak eloquently and with great feeling about his physically handicapped daughter, who could not be accommodated at their neighbourhood school, but had to be taken by bus to a school several miles away. She was, her father went on to say, a very lonely girl as a result, because she had no opportunity to meet and become friendly with children in her own neighbourhood. His plea was that his child, and others like her, be accommodated in their local schools.

This is a modest request on the face of it, but one that it would be impossible for the system to accommodate. There is simply no way, given any reasonable level of funding, that each local school could be equipped with all of the specialized staff and facilities needed to provide an appropriate educational experience for every child regardless of the nature of his or her exceptionality. A balance must be struck, and not everyone will find that their wants and needs are satisfied.

While parents of children with learning or other disabilities wish their children to be included in the mainstream of schools, parents with children who have been identified as having special abilities often want their children to be

segregated for instruction. We think that gifted students can be accommodated through our recommendations for the Common Curriculum by being challenged in their activities. Extracurricular activities may also be chosen for their potential to develop each child's natural talents. Special projects and programs to challenge students should be developed by school districts in their discretionary time.

Classroom teachers will need a good deal of support to address the needs of children with special disabilities and abilities.

We suggest the Ministry of Education provide resource materials for teachers, illustrating effective ways to accommodate special disabilities and abilities in activities of the Common Curriculum.

5.C.2 Ability Grouping

Some form of ability grouping is likely practised in virtually every school in the province by teachers trying to cope with the dilemma of dealing with individual differences in ability, aptitude, and motivation among students in large classes: How can each child be taught as an individual when there are about 30 children in each classroom? Many elementary teachers establish small groups within their own classrooms, usually for language arts and mathematics. At the junior secondary level in the vast majority of schools, streaming of students into different classes on the basis of some measure of aptitude or ability is commonplace. At the senior secondary level, students may be "tracked" into separate programs: e.g. academic or vocational.

The underlying rationale for the practice is simply that if we could group students who were alike with respect to the salient variables, each of them might learn more than would otherwise be the case. The intention may be laudable, but the practice has done more harm than good. Within-class groupings are usually set up on the basis of rather informal assessments of the students and so there is great scope for error and mis-classification. Procedures for setting up streaming or tracking programmes vary from school to school, and are subject to the same dangers of mis-classification of students as the within-class procedures.

The educational outcomes of streaming and tracking of students are a source of concern, because they tend to increase the attainment gaps between students rather than narrow them. Results from the Second International Mathematics Study from the United States[14] show that differences in achievement between students in remedial classes and those in accelerated classes at the Grade 8 level become significantly greater over the course of the school year.

Such an outcome is not at all surprising when one compares the content of remedial and accelerated courses. The remedial students have failed to master the computational skills of arithmetic in their first seven years of school, so they spend most of their time going over the same old ground. The accelerated students, on the other hand, are doing algebra, some geometry, and maybe using calculators. The contrast could hardly be more stark. Our goal should be to develop each child's potential, and these kinds of grouping practices are not effective for meeting the goal.

It should come as no surprise, then, that the research literature does not show most forms of ability grouping to be efficacious. What is surprising is how committed so many teachers are to the practice. It may be a case of the power and logic of the rationale masking the very real difficulties that stand in the way of effective implementation. In fact, if we really thought about how different people are from one another, it is ludicrous to suppose that we could, within a single school, find about 30 children, all of the same age and in the same grade, who were pretty much alike on any of the variables related to academic success in an important way. Ludicrous it may be, but it is done every day throughout the system, both here and elsewhere.

We suggested earlier that heterogeneous grouping become the norm. Students could be permitted to choose the class and teacher they were to be registered in; or, students could be randomly assigned to classes. Informal and temporary within-class grouping, or cooperative learning groups could be set up, not so much to reduce differences but to encourage students to work together and learn cooperatively.

5.C.3 Extracurricular Activities

Children may not have opportunities to develop all their talents and interests in their curricular activities. Activities organized at the school outside of the prescribed curriculum, therefore, offer an excellent avenue for expanding the opportunities children have to engage in meaningful and diverse experiences. The number and nature of the extracurricular activities in which the schools involve children seem almost unlimited: concerts, multicultural festivals, field trips, choirs, bands, sports teams, photography clubs, and theatrical and musical performances are some examples. The inclusion of diverse extracurricular activities as a means for responding to individual differences has an additional benefit. Children spend a large proportion of their time at school and it is important that they see their schools as friendly, supportive environments. The experiences they have through extracurricular activities contribute to a positive atmosphere in the school.

These are sometimes the very activities that give students a sense of identity with their schools, their peers, and the adults. They allow students opportunities to participate in, or be spectators at, events that draw on individual talents and interests. They provide parents and other members of the community with opportunities to see the range of talent fostered in schools. They contribute to a sense of pride and respect for the school and the participants. These activities may be considered extracurricular, but they should never be considered unimportant. In fact, the term co-curricular is often used to indicate that the activities should be seen as important ways to enhance the curriculum. The Commissioner's Working Group on Business and Education highly recommend extracurricular activities saying that such activities as "sports and the arts, including drama and music, also help to develop a competitive spirit and sense of teamwork."

We believe that teachers and students should be recognized for the additional time and effort they devote to such activities outside of the required curriculum, and that they should be encouraged to continue these endeavours. One way to provide tangible evidence of support is to provide some consistent funding. Presently, school districts offer limited financial support, but all other funds must be raised through the students. It seems unfair to expect students or their parents to provide much of the funding needed for transportation, uniforms, costumes, equipment, and instruments. It also seems unfair to ask teachers to spend many additional hours holding hot-dog sales, paper and bottle drives, or raffles to raise the money required for extracurricular events. The Student Task Force of this Commission for instance said:

> *Extracurricular activities are an essential part of school life. We feel that there should be increased funding for all types of activities, especially in rural and northern areas where travel budgets for sports teams and bands can be very high.*
>
> *We suggest that the funding formula employed by the Ministry of Education include a category for extracurricular activities.*

5.C.4 French Immersion

At many hearings, briefs were submitted and presentations made by supporters of French immersion programmes. Our inclination is to support the continued existence and growth of French immersion as one among a number of alternative programmes available to the children in our schools, provided that this does not divert funds from other programmes. Local school boards, as the elected representatives of the people in their districts, are the ones best situated to make this decision.

Parents choose French immersion programmes for their children for a variety of reasons, but they all expect that their children will become functionally bilingual as a result. In fact, however, a recent study of graduates from the French immersion programme in Ottawa schools indicates that many of them are unable to carry on conversations in French.[15] We believe that, if more resources were devoted to the teaching of French as a second language, demand for French immersion would decrease. If we had to choose between the two, we would opt for French as a second language for all students rather than French immersion for the few.

5.C.5 Independent Schools

Under the terms of existing legislation, British Columbia provides funding support for a wide variety of independent schools. We believe that, on the whole, th. present situation is one that the majority of British Columbians support, and that it provides parents with real alternatives from which to choose in deciding where their children should attend school. Independent schools could serve as healthy competition for the public schools, but rules would have to be established to ensure that the competition was a fair one.

The first rule should be that all schools operating in British Columbia, public as well as independent, funded and not funded, must follow the same basic curriculum and system of time allocations. The Common Curriculum we have recommended is for all students in all schools, not merely for those in public schools.

As a corollary to our first rule we would add that all schools should be monitored by the Ministry of Education to ensure that the curriculum was being adhered to as intended. It would also mean that all schools would be involved in the Learning Assessment Programme as well as in school accreditations.

Independent schools are sometimes accused of excluding children who have difficulty learning, who may be reluctant learners, or who have special needs for which specialized attention is required. Such practices would certainly constitute unfair competition if they were practised, and the intent of our second rule would be to forbid these practices in any school receiving government support. The operating principle should be that any child who is otherwise eligible to attend the independent school of his or her choosing, and who could be accepted and accommodated at the local public school, must be accepted at the funded-independent school.

Our first and second rules are intended to ensure that schools set up to foster religious intolerance or racism are precluded from doing so. Not only should they not be funded, they should not be permitted to operate. Our third rule stems from quite a different concern: schools which are exclusionary on the basis of wealth.

We believe it is inappropriate for public support to be given to independent schools which charge substantial fees. There are a number of very fine private schools in British Columbia, some of them with excellent academic reputations, which charge students fees on the order of several thousand dollars a year. Such schools do not need additional public support and we believe it is entirely inappropriate for them to receive any such support. They should be deemed ineligible.

5.D Achievement

On the criterion of achievement Coombs writes,

> *An excellent educational program must be efficacious in fostering all of the diverse range of educational achievements we associate with being an educated person. These achievements can be expressed fairly clearly in abstract terms. Among the most important such achievements are: understanding of the major conclusions of our culture's intellectual disciplines, and of the modes of reasoning by which such conclusions are established and revised; appreciation of the fundamental moral and political commitments of our society together with an ability and disposition to participate in the modes of reasoning by which such commitments are criticized and justified; appreciation of literature, art and music; the ability and disposition to think for oneself, clearly and critically; the ability and disposition to enter into and maintain friendships and nurturing relationships with other people; the ability to read with comprehension; and the ability to communicate clearly and effectively through speech and writing.*
>
> *Despite our ability to describe these achievements in abstract terms, educators are less than clear about what many of them imply in concrete, operational terms, i.e., in terms of specific learning attainments. Moreover, we lack any clear understanding of the way in which many of these achievements interrelate with one another. Thus, for example, we have no clear understanding of the specific educational attainments that are associated with being an autonomous, critical thinker or those required for responsible citizenship; and we are unclear about how attainments such as acquiring knowledge, becoming a better thinker, and being able to make responsible moral decisions are interrelated. So long as*

we lack such understanding our educational programs are not likely to be very successful in fostering these desirable achievements.

To some extent the influential taxonomies of educational objectives developed by Benjamin Bloom, David Krathwohl, and their associates have served to exacerbate the problem. These taxonomies distort our understanding of human learning achievements by leading us to believe that they can sensibly be divided into cognitive and affective attainments. In actuality all significant human learning is an indivisible mixture of both elements. Acquiring knowledge, for example, involves a change in attitude, and acquiring a value involves a change in understanding. They also propound an overly simple and mechanistic view of the way learning attainments are interrelated.

To reject these taxonomies is not, however, to abandon our attempts to give more concrete, operational accounts of our educational aspirations and to better understand the ways in which they interrelate. This is an extremely important task which deserves more attention than it has hitherto received. Moreover, our ordinary language contains all of the conceptual resources necessary for doing the job. We need careful analysis of our abstract goals in terms of the kinds of understandings, abilities, skills, appreciations, habits, dispositions, inclinations, tendencies, sensitivities, attitudes, values, and commitments that they imply. We also need careful analysis of how these various kinds of human attainments interrelate. If we hope to achieve clarity about our educational goals, there is no good alternative to responsible conceptual analyses of these notions.

There is in fact some urgency about acquiring a better understanding of the educational achievements we want to bring about, for several forces currently work to distort our judgements about valuable educational achievements. Our society is inclined to identify educational attainment with the achievement of high scores on achievement tests (despite the common knowledge that most of what is tested for on achievement tests is quickly forgotten). Consequently, educators have been encouraged to try to conceptualize all worthwhile educational attainments in terms of performances that can be exhibited on achievement tests. This has resulted in the distortion, trivialization, or denigration of many of our most important educational attainments. Being a good thinker, for example, is widely and distortedly conceptualized as a matter of having a set of "skills," and appreciation of art is either trivialized to remembering facts about art works or written off as unworthy of serious educational concern. But there is, in fact, no good reason to accept the view that only those attainments that can be measured by achievement tests are worthwhile. The achievements requisite to being a critical thinker or a responsible citizen are no less worthwhile simply because they cannot be measured by the standard sort of achievement test. More generally we must recognize that achievement tests provide us with one kind of evidence for judging that some valuable learning has been achieved. Depending on the kind of learning in question, other kinds of evidence may provide better grounds. We regularly make responsible judgements about the knowledge, abilities, and sensitivities of our friends and colleagues on the basis of our observations and interactions with them. If our educational programmes are to accomplish the full range of desirable goals we have set for them, we must resist the tendency to equate achievement with achievement test results and the temptation to narrow our focus to those achievements to which we can most readily give concrete interpretations.

It is reasonable to insist that judgements about curriculum revision take into consideration the likelihood that the revision will result in increased performance by students. The fundamental problem, however, is that it is difficult to determine whether or not student performance has improved because our evaluation methods are not always reliable. Elsewhere in this report we have referred to the problems with evaluation of student achievement: the measures we use are imprecise, many of our most important goals are difficult to assess, standards for student achievement differ from classroom-to-classroom and from school-to-school, some aspects of achievement are beyond the control of schools, and the type of information collected for purposes of accountability may not be very suitable for judging individual achievement.

The achievements we would like to see enhanced through the curriculum are the knowledge, abilities, and attitudes around which the Common Curriculum and the common component of the final years of schooling are planned.

We believe that our suggestions for the Common Curriculum, if adopted, will lead to greater student achievement. Developmentally appropriate preschool experiences will provide all students with a better chance to begin their schooling on a solid foundation, and basing activities throughout the Common Curriculum on students' experiences, maturity, and interests will give them a better chance of succeeding. Having students become more engaged in their own learn-

ing and critical thinking should result in improved student achievement, and we believe that a more relevant organization of the curriculum, integrated and interdisciplinary, will lead to greater student achievement.

The wider range of alternatives proposed for the final years of schooling will provide students with opportunities to pursue studies in areas of their choice. The greater individual attention we propose through the establishing of homeroom and mentoring programmes should contribute to improved levels of individual performance. Improving access and responding to individual differences can also be expected to result in higher levels of achievement by greater numbers of students. In short, all of the recommendations we have made to this point were intended, among other things, to improve student achievement.

The three major points about evaluation which we have made thus far are: classroom teachers are in the best position to evaluate students on a regular and consistent basis; classroom teachers should be provided with criteria and standards and with methods for assessing them through curriculum guides and resource books; information which is needed to ensure some consistency of evaluation around the province should be collected by the Ministry of Education.

A publication of the Board of Secondary School Studies in Queensland, Australia[16] discusses the use of criteria and standards this way:

> *Essentially, this approach necessitates the nomination of a set of standards on those criteria by which student performances in a particular subject are to be judged on exit from the course. The first task is to identify the criteria...*
>
> *Having identified the criteria, a number of standards on each criterion are nominated to enable differentiation of student performances. For example, using the criterion of problem solving, student performances could be differentiated at different points along a continuum, ranging from those that indicate only very little ability to solve familiar problems, to those that show an ability to solve novel problems successfully.*

The publication suggests, and we agree, that having clearly explicated criteria and standards allows for more precise judgements on student performance in relation to a well-defined ladder of achievement, and at the same time provides students with direction for personal growth. It also allows for more flexibility in selecting classroom activities which may lead to more students meeting the standards. This is consistent with the goal of nurturing intellectual and moral autonomy, and with our criteria of equity of access, relevance and response to diversity.

5.E Accountability

The recently released report of the Auditor General on the Ministry of Education addressed the fundamental question of whether or not the people of British Columbia are receiving good value from the educational system. The province currently spends about one and a half billion dollars a year on the K—12 system, and the taxpayers of British Columbia have a right to know what kind of return they are getting on that investment. They also expect that requests for new funds for innovative programmes, or for increased funding for existing programmes, will be based on a strong rationale.

It is not our intention here to discuss the relative level of funding provided for the educational system in British Columbia as compared to that in other Canadian and North American jurisdictions. That subject does not fit within our mandate as the group responsible for commenting on the curriculum. On the other hand, it goes without saying that the quality of the curriculum offered in our schools and the level of funding available for education are inextricably linked. At the present time, the level of per-pupil funding in British Columbia is among the lowest in Canada, and this is cause for serious concern. This is a matter which affects the career and the future opportunities available to every young person in the province. It is a matter of such importance that it cannot be permitted to be settled in partisan political fashion, or to languish without appropriate action being taken because of a lack of political will.

The public has a right to know if it is obtaining good value from its investment in the educational system, and the system has an obligation to provide solid evidence in support of whatever claims it might make about what has been achieved. Coombs' explanation of the accountability criterion is as follows:

Accountability is meant to ensure that those who design and operate our educational programmes perform their tasks in a responsible manner thus producing educational programmes of high quality. In our society all authority and responsibility for designing and operating public educational programmes ultimately rests with the people. Through the electoral process, this authority and responsibility is delegated first to public officials, and then to professional educators such as superintendents, principals, and teachers. Persons who delegate responsibility for designing and operating educational programmes to others do not thereby free themselves of responsibility —they retain it in residual form. If they are to exercise this residual responsibility in a morally appropriate way, they must impose on their agents an obligation to be accountable to them, i.e., to provide them with evidence for judging that the agents are acting responsibly in designing and operating educational programmes.

Accountability obtains to the extent that the agents accept and fulfill their obligations to provide such evidence. The point of having accountability within a social system or institution is to enable us to trace who is liable when the system is not functioning adequately, and to take appropriate remedial measures.

Most of the current discussions of accountability focus on mechanisms for assessing student achievement and reporting the results. This approach is too narrow and cannot produce a system of accountability which will allow us to determine who is at fault and what changes need to be made when school programmes are not functioning adequately. Consider, for example, how accountability applies to the designers of educational programmes and curricula. Such designers are responsible for the following: 1) selecting curricular objectives and devising programmes that accurately and adequately reflect our society's acknowledged educational ideals and goals, 2) selecting curricular materials containing content that is true, accurate, and unbiased, 3) ensuring that the programmes recommended do not involve immoral treatment of students such as indoctrination and inequitable distribution of opportunities, and 4) ensuring that the programmes recommended are compatible with the best available knowledge concerning the requirements of effective schooling.

An adequate system of accountability requires that programme designers provide evidence that they have fulfilled these responsibilities. A variety of different kinds of evidence will be relevant, including testimony from experts in the relevant disciplines, in the analysis of educational goals, in applied ethics and in school research findings. Scores on achievement tests are relevant only to judging whether or not the recommended programme is compatible with the requirements of effective schooling. Even here it provides only weak evidence for school personnel may have fostered high achievement by ignoring aspects of the recommended programme.

Achievement test scores in themselves also fail to provide good evidence that teachers and other school personnel are adequately fulfilling their responsibilities. Poor scores may be the best achievable given the human and material resources allotted to the educational programmes by the political officials responsible for them. Similarly, school personnel may be irresponsibly squandering time and resources even though high scores are being achieved. An adequate system of accountability must seek to gather better evidence for judging whether or not school personnel are adequately discharging their responsibilities.

Political authorities cannot even point to high achievement scores as good evidence that they are adequately meeting their responsibilities, for the tests may be poor or the achievements they measure may be trivial when judged against our more basic aims. Adequate accountability must supply good grounds for judging that this is not the case. In this case too it is likely that the best evidence will be the testimony of various kinds of experts.

This is not to suggest that evidence of student achievement is irrelevant to determining whether or not school personnel and public officials are meeting their responsibilities. However, it is important to be clear that the persons who design and operate our educational programmes have a range of diverse responsibilities, and that the kinds of evidence required to judge the extent to which these responsibilities are being adequately fulfilled are similarly diverse. To have an appropriate system of accountability it is necessary to be clear about what each of the various kinds of persons sharing in the design and operation of our educational programmes are responsible for, and what is to count as good evidence of responsible performance by each. It is also necessary to be clear about who is going to judge the adequacy of performance and what criteria are to be used in making these judgements. These are moral as well as practical necessities.

Coombs' remarks on accountability warn us of the limitations inherent in relying too heavily on student achievement, narrowly conceived and narrowly evaluated, as the sole criterion for satisfying the requirements of accountability. The

system is designed to foster achievement and growth, and we must be open to consideration of a variety of measures and indicators, each of which might provide a piece of the whole complex picture.

Evaluation is more of an art than a science. Les McLean, of the Ontario Institute for Studies in Education, refers to it as a craft.[17] However, some things are fundamental. First, those who are in positions of authority must be accountable for their actions and for the actions of those for whom they are responsible. Second, accountability can only be expected with reference to stated expectations or goals.

For education in British Columbia, accountability is a complex task as the Auditor General pointed out in his report to the Legislative Assembly. Education is a provincial concern, and the Ministry of Education has responsibility for its overall leadership and direction. The 75 school districts, each governed by an elected Board, actually own and operate the schools. There are approximately 1,500 public schools in the province, and these schools offer programmes for 500,000 students, under the guidance of 28,000 teachers and administrators. Identifying what responsibilities fall to whom is not an easy task, and without a clear mandate or statement of purpose for the schools, accountability is elusive.

Insofar as curriculum is concerned, there should first of all be accountability for the process itself: that is, for curriculum development, implementation, and evaluation. For each of these aspects of the process, criteria and standards should be stipulated. Indicators of what would constitute adequate evidence should be identified. There should be a mechanism in place which allows for monitoring of the process, and there should be a clear avenue identified for acting on and reporting the findings.

Those responsible for curriculum must be able to provide evidence to show they have made decisions about selecting goals, content, learning activities, and assessment techniques consistent with the kinds of criteria discussed here: relevance, equity of access, and response to diversity. In addition, criteria which reflect what we know about effective decision-making processes should be established. Procedures should allow for involvement of relevant parties, ensure consistency of approach, and base decisions on the best available information about teaching and learning.

Those responsible for arranging the implementation of the curriculum should be identified. As we stated earlier, implementation is the weakest link in the process, and, to some degree, that is because there has never been a clear mandate setting out who is responsible for what in terms of implementation. We already know a good deal about what characterizes effective implementation practices, and those characteristics associated with good practice should be monitored.

Evaluating the effectiveness of the curriculum is obviously important. Is the curriculum accomplishing what it set out to accomplish? Does it need revision or replacement? The answers to these questions and others like them lead back to development. Again, it is important that a mandate make clear what responsibilities various parties have in this area. Providing for accountability will mean that those responsible can provide evidence to the effect that they have an appropriate system in place for monitoring curriculum effectiveness, they have identified criteria and standards, and that they have appropriate mechanisms for acting on the information they collect.

Being accountable for students' growth and progress with respect to the goals of the system is both the most obvious and most difficult aspect of the accountability criterion to meet. The system must be able to report at the system level, in highly aggregated yet informative fashion, on how students are faring. The dilemma is that the most valid information of this kind is too idiosyncratic to be of much use for system-level purpose; it pertains to students as individuals. Moreover, many of the important variables that schools must deal with, and which can influence students' achievement in a significant way, are largely or completely beyond the influence of the school. There are individual differences in talent and motivation, for example, and these can affect performance levels dramatically.

The task is difficult, but it must be done. The Ministry of Education has been involved in an effort to develop performance indicators for the system, and that work should continue. We also need, as we have said earlier, to learn how to evaluate better those things we are truly interested in, rather than continuing to rely on secondary indicators or poor substitutes.

The final aspect of accountability is reporting out, and this is an area where improvement is greatly needed. The Ministry of Education does provide good information through its Annual Report, but we suspect its readership is very small. Some school districts have their own public information programmes. We note for example that Saanich School District has quite an extensive programme aimed at providing information about its activities and accomplishments to the community. So too do some of the Lower Mainland districts. Schools frequently host open-house presentations, where the parents and other members of the community are invited to find out about the school's activities and accomplishments.

Much of this activity is more likely in the realm of public relations than of accountability. Teachers, principals, and district-level administrators need to take more seriously their responsibility to account for their stewardship of the educational system. From the evidence available to us locally and internationally, we are confident that we need not fear the results of such an accounting. In fact, having good evidence available might help curtail the sort of partisan rhetoric which has characterized too much of the educational debate in British Columbia in recent times.

5.F Conclusion

There is no doubt that, had others performed this task, their choice of criteria of quality, or indeed of quality as a dimension of the framework for analyzing the curriculum, might have differed from ours. Without necessarily disagreeing with our choice of criteria, Coombs adds the following postscript to his comments on the five criteria:

> *[Quality] for a curriculum will of course have many facets. It may be that the ideals implicit in the concepts of relevance, accessibility, achievement, diversity, and accountability cannot be stretched to cover all of the standards that should be applied to judging the worth of a curriculum for B.C. schools. The following sorts of issues must also be considered.*

- *The worth of the studies offered. We must be concerned with balance and comparative worth as well as with epistemic and moral acceptability. How are judgements of worth related to judgements of perceived social needs both now and in the future.*
- *The necessity of the studies required.*
- *The morality of the treatment students receive in the programme. This includes a concern for non-indoctrination, non-manipulation, and non-intimidation.*
- *The extent to which the following of the curriculum is or is not injurious to the mental health of students or teachers.*
- *The extent to which the means of assessing students and school programmes are benign rather than deleterious.*
- *The extent to which the institutional framework within which the curriculum operates has benign rather than deleterious effects.*
- *The efficiency of the curriculum in terms of time and resources when compared to plausible alternatives.*

References

1 We originally used the term "Excellence" as the label for the third dimension of our framework. However, we felt that the term had been overused recently and, in certain quarters, been somewhat politicized.

2 Kathy Trait, "Dropping Out: A Dead-end Street for Thousands of Teens," The Province, Tuesday, 10 May, 1988, p. 35.

3 Ontario, Ministry of Education, *Ontario Study of the Relevance of Education, and Issue of Dropouts*, George Radwanski, 1987.

4 In the City of Chicago, the School Board now provides four-function calculators to all students in Grade 4 through 6, and scientific calculators to those in Grades 7 through 12. They are distributed in the same sort of way as textbooks are, and they cost considerably less than an average contemporary textbook.

5 Carol LaBar, and Ian Wright, *Moral Education*. (A paper prepared for the Royal Commission on Education).

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7 British Columbia, Ministry of Education, *Report of the Provincial Advisory Committee on Computers to the Ministry of Education*, 1987.

8 David F. Robitaille and James M. Sherrill, *The 1977 British Columbia Mathematics Assessment: General Report* (Victoria: Learning Assessment Branch, Ministry of Education, 1977).
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9 David, J. Bateson, Chairman, *The 1986 Science Assessment: General Report* (Victoria: Student Assessment Branch, Ministry of Education, 1986).

10 Barbara Houston, "Gender Freedom and the Subtleties of Sexist Education," *Educational Theory* 35(4, 1985): 359-369.

11 Linda Eyre, *Curriculum and Gender Equity.* (A paper prepared for the Royal Commission on Education, 1988).

12 Some schools are run by the Native Indian Bands and others are federally supported schools on reservations.

13 Comments of this kind were strongly endorsed by Professor Verna Kirkness, Director of the First Nations House of Learning at the University of British Columbia, when she addressed our seminar in July 1987.

14 International Association for the Evaluation of Educational Achievement, *The Underachieving Curriculum: Assessing U.S. School Mathematics from an International Perspective* (Illinois: Stipes Publishing Co., 1987).

15 Margaret Polanyi, "Language Anxieties: Immersion Graduates Find Bilingualism Elusive," *The Globe and Mail* (National Edition), Friday, February 12, 1988.

16 Marilyn McMeniman, *Towards a Working Model for Criteria and Standards under ROSA* (Queensland: Board of Secondary School Studies, 1987).

17 Leslie D. McLean, *The Craft of Student Evaluation in Canada* (Toronto: Canadian Education Association, 1985).

6. Implementing our Proposals

We have attempted to keep to a minimum the number of labelled suggestions for change. We believe it is more likely that a few, carefully selected suggestions will be adopted than many. We are convinced that if the system were to be restructured along the lines we have recommended, it would be a better system, and everyone connected with it would benefit.

Implementing our proposals will take time and money. Personnel would have to be hired at the Ministry of Education, as well as in school districts. Committees and task forces would have to be set up to translate our suggestions into concrete plans for action and implementation. Curriculum guides would need to be re-written, and professional development programmes developed for teachers at all levels to introduce them to the new curricula.

The heart of our proposed re-structuring of the educational system is in the Common Curriculum, and we would urge that work begin immediately on developing this curriculum along the lines we have sketched out. In the meantime schools, particularly those enrolling students in Grades 8 through 10, could begin to implement the spirit of the Common Curriculum.

Many of our suggestions related to the introduction of the Common Curriculum could be implemented immediately. For instance, implementation of the proposals about streaming, integration of subjects, cross-grade grouping, homerooms, and mentors could be either partially or completely implemented while the revision of curriculum guides and related materials was taking place. Steps should be taken immediately to begin implementation of our suggestion that French be a required component of the curriculum in every grade from Grade 1 to Grade 10. Although most school districts already do have French as part of their elementary programme, it does not always begin in Grade 1. At the secondary school level, while all students study French in Grade 8, many do not do so in Grades 9 and 10. New and more appropriate teaching materials will have to be acquired. Teachers will have to be found: some from among the ranks of those currently teaching in the province, others to be added as new teachers.

We would also urge that work begin immediately on the development of our Lifespan Education programme. The timing for this seems particularly appropriate since the Curriculum Development Branch is currently completing work on a new Health and Guidance curriculum. This could serve as the nucleus for the new programme, to which could be added the necessary topics from other, already existing courses such as Consumer Education and Family Life Education, as well as the new topics or units we have suggested.

It might take somewhat longer to implement our proposals for re-structuring the secondary school. This would involve the establishment of stronger links and increased cooperation between secondary schools and colleges and vocational institutes. It will require new links between the Ministries of Education, Labour, and Post-Secondary Education and Job Training.

Similarly, action on our suggestions about funding for pre-school and coordinating many social services through the neighbourhood school would require inter-ministerial cooperation and coordination. In addition, the several professional associations involved would need time to explore the implications of such an arrangement.

If these proposals are to be adopted and implemented, a great deal of work needs to be done. We would like to see such work begin soon, and our final suggestion is simply that. The process of implementing the recommendations of this Commission should begin as soon as possible, and the additional funds required for their implementation must be provided.